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Testing Orem's Dependent Care Agency Construct: Parents as Health Educators in the Home

JoAnn M. Baldwin
Old Dominion University

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TESTING OREM'S DEPENDENT CARE AGENCY CONSTRUCT:
PARENTS AS HEALTH EDUCATORS IN THE HOME

by

JoAnn M. Baldwin

B.S.N. May, 1975, University of Connecticut

A Thesis Submitted to the Faculty of the School of Nursing
Old Dominion University in Partial Fulfillment of the
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Approved by:

Linda L. Davis (Director)

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Abstract

Testing Orem's Dependent Care Agency Construct:

Parents as Health Educators in the Home

JoAnn M. Baldwin

Old Dominion University, 1987

Director: Linda Davis, RN, PhD, ANP

The capacity of parents to act as health educators in the home is proposed as a functional piece of Orem's dependent care agency construct. A new data collection instrument, the Health Education Questionnaire, was developed to explore the conceptual dimensions of an intellectual pre-production phase of health action-taking. Parents' self-reported knowledge and beliefs regarding selected health topics, as well as their perceptions of ego strength and valuing health were proposed as independent factors in dependent care agency related to health education in the home. Methodology included the investigation of reliability using Cronbach's alpha and validation of the agency construct using factor analytic techniques. The resulting two-factor model indicated separate cognitive and affective dimensions of agency, suggesting that knowledge

and beliefs are significant elements related to the ability of parents of school-age children to function as health educators. Recommendations for further testing and refinement of the new instrument are given.

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Chapter 1

Introduction

In the traditional family, parents act as teachers by interpreting the world to their children (Friedman, 1981) and a sharing of knowledge, attitudes and skills occurs spontaneously in the course of child-rearing. Rosenstock (1974) stated that "socialization in the nuclear family is of overwhelming importance in determining life-long patterns in the child" (p. 383). Kirscht (1974) clarified this socialization process as "conditioning by social circumstances and interactions with others" (p. 403). Acquired health beliefs form the basis for health decision-making and are integrated as part of a child's "cognitive structure". The natural consequence of this process is that children "adopt many health-related habits and practices which will permanently influence their adult behavior" (Rosenstock, 1974, p. 52). For this reason, the parental role as a health educator cannot be overemphasized.

Dorothea Orem (1971, 1980, 1985) developed a self-care theory that is useful for describing the ability of an adult to care for himself (self-care agency) and to care for dependent members of the family (dependent care agency). Research on the dependent care agency construct

has a dual significance. First, it is typically parents who make decisions about health care matters on behalf of their children, so their health knowledge and health beliefs would be critical in determining the efficacy of care rendered (Kirscht, 1974, p. 401). Second, because children initially acquire health knowledge, attitudes and skills as a consequence of family interaction, there is predictive value in determining parental agency. What knowledge, attitudes and skills will become a permanent part of the child's health action-taking repertoire?

Purpose

Orem stated that "the community role in health care at the primary level of prevention ... (is to) provide services in the form of education to prepare individuals and families to fulfill their personal care roles" (Orem, 1985; pg. 191). The major premises of this study were that the family is the basic unit of society, that health behaviors are learned, and that the family is the primary source of health education of its dependent members.

The purpose of this study was to develop and test a tool to measure a specific facet of dependent care agency, that is, the role of the parent as a health educator in the home. It was conjectured that this tool would be valuable to persons in a position to plan health education programs. The associations among this aspect of dependent care agency, childrens' health care education and childrens' eventual development of self-care agency make

this worthy of investigation.

Statement of the Problem

Educating children about health and self-care is an integral part of the health care responsibilities of parents. Fonaroff (1977) pointed out that "every one performs a health education function whenever one's role includes disseminating information on what someone needs to know in carrying out specific activities which prevent disease occurrence or disability" (pg. 110). Certainly parents do this and much more. In addition to illness prevention, parents continually assist their children to maintain and promote physical, psychological and social wellness in varying degrees.

The inclusion of parents in the planning of formal health education programs is alluded to by professional health educators (National Professional School Health Education Organizations, 1984). Yet, are parents credited with the initiation and advancement of self health care among dependent family members through home health education? Is there not value in determining 1) a parent's capacity for health education in the home, and 2) the actual transmission of health information among family members, as a baseline assessment for the purpose of planning formal health education programs for school-age children? Parents are, in truth, the first-line managers of their childrens' health education, and they provide a foundation for all future health education efforts.

The incidence of health education, or the potential for it to occur in the home has been overlooked as an important research topic. Data collection instruments which measure the prospects for health education to occur in the family setting do not exist. A reliable and valid instrument to assess parents' capacity for the health education of their school-age children would provide nurses and educators with a valuable data collection tool. Identification of health problems for individuals and families could be expedited with the assessment of inadequate health knowledge and/or inappropriate health beliefs or misconceptions regarding health-related issues. For instance, how do parents perceive their role as a health educator? Are their knowledge and attitudes regarding health topics congruent with the perceived role? Which health topics are valued by parents in their attempts to enact the health educator role? Conversely, family strengths with regard to health care could also be identified as the scope of the dependent care agency construct is elaborated and related data collection instruments are developed.

An additional objective of this tool development project was to identify an appropriate and effective range of topics for the health education of school-age children. Health education for children was broadly conceived by the researcher to include any circumstance that might affect the child's physical and/or emotional well-being. Tool construction, therefore, included health topics which were

categorized as physical, developmental and psychosocial.

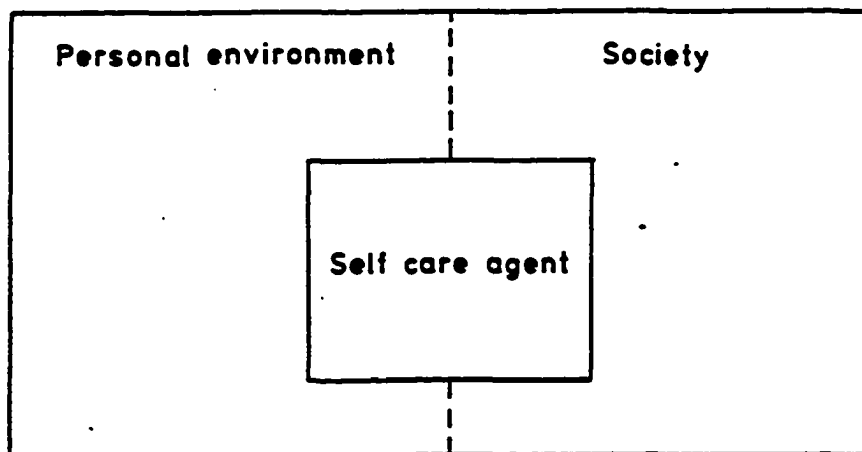
Theoretical Framework

In order to improve the understanding of health behavior as a derivation of personal perceptions, attitudes and beliefs as well as knowledge and skills, an eclectic theoretical approach was selected. The Health Decision Model was used in conjunction with Orem's Self-Care Deficit Theory of Nursing as the means to strengthen the theoretical framework for the study by explicating the affective components which contribute to the production of self (dependent) care.

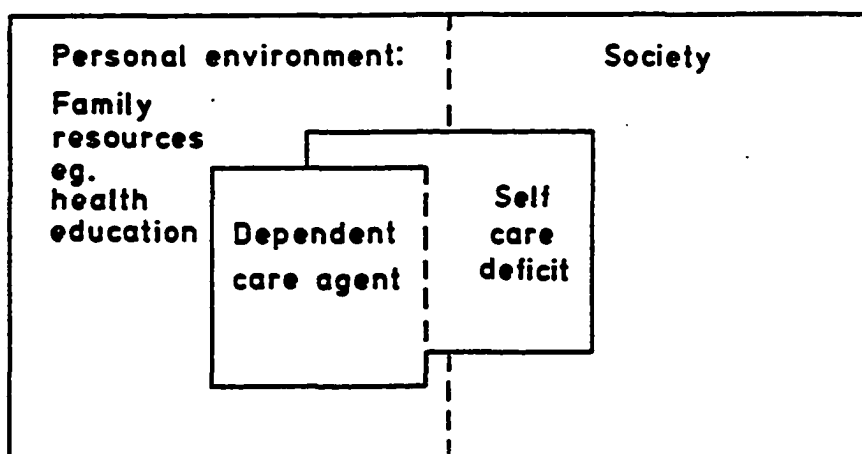
An example of this type of theoretical synthesis may be seen in a recent publication by Steiger and Lipson (1985) who proposed a composite self-care approach as a philosophy of nursing care. Orem's Self-Care Theory was used as a point of departure, and the framework is rounded out with two humanistic nursing theories (Rogers, Leininger) and four relevant social science theories (symbolic interactionism, Health Belief Model, Explanatory Models and Adult Learning Theory). The authors proposed that through this construction of a more comprehensive theoretical approach to nursing practice, theory applicability and attainment of health goals are improved. The following discussion of Orem's Self-Care Deficit Theory of Nursing and the Health Decision Model describes the ways in which each contributes to the overall theoretical framework for the study.

Self care. Orem stated that "ways of determining and meeting one's self-care needs are not inborn" (Orem, 1985; pg. 108). Self (dependent) care is comprised of a set of learned behaviors and attitudes and is a function of culturally derived influences and participation in social groups. A state of equilibrium exists when demands for self (dependent) care approximate the ability to produce said care. As health care abilities are exceeded by care requirements, an inequality of needs and resources, known as the self (dependent) care deficit, exists, and there is justification for professional health care (nursing agency).

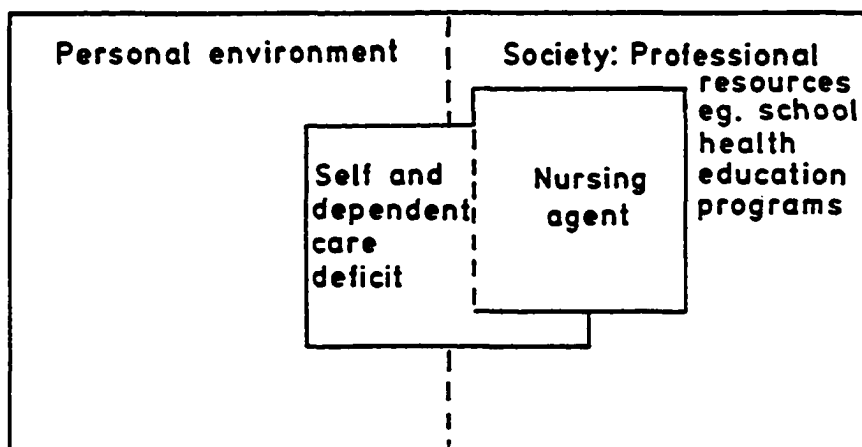
Figure 1 graphically depicts the situational possibilities as health care is provided by the "agents" (self, dependent and nursing) described by Orem. In each scenario, the individual exists simultaneously within personal and community environments. The personal environment includes family members who provide health resources to the individual in the forms of knowledge, attitudes and skills, while the community environment offers professional health resources, scientific knowledge, educational support and care systems. The self-care agent produces continuous self-care based on acquired personal resources to meet universal, developmental and health deviation self-care needs (1A). If demands for care are unmet, a care deficit exists and a dependent care agent may subsidize the individual's efforts to produce self-care



1A. Self care agency



1B. Dependent care agency



1C. Nursing agency

Figure 1. Self Care Agency, Dependent Care Agency and Nursing Agency

(1B). When self or dependent care agency is ineffective or unavailable, professional nursing care (a community resource) is legitimized (1C).

Self (dependent) care agency is described as a deliberate action in that it is purposeful and goal-seeking. Two distinct phases of this activity are recognized and they reflect 1)the "operations preceding and leading up to decisions about what is to be done and for what purpose", 2)"operations subsequent to these decisions for engaging in a selected course(s) of action" (Orem, 1985, p. 117). Phase one, the investigative and decision-making phase of self (dependent) care (referred to by this researcher as the pre-production phase), is a cognitive one. Self (dependent) care agents gain knowledge about themselves, the environment and the appropriate course of health action, with the phase culminating in a decision about the action(s) to be taken. Orem points out that if a decision is not made, phase two, the actual production of self (dependent) care, will not occur.

Three types of self-care requisites are postulated which follow from the types of situations generating the need for self-care. Universal self-care requisites include the need for water, air, food, elimination, a balance between activity and rest, a balance between solitude and social interaction, safety and the "human desire to be normal". Developmental self-care requisites are concerned with needs arising from the events occurring during life

stages, such as pregnancy or death. Health-deviation self-care requisites are needs associated with an illness state or functional defect. Restrictions which prevent individuals or groups from producing self (dependent) care are described as self-care limitations. It is the inability to cope with a self (dependent) care deficit, either through a lack of knowledge or skills, that legitimizes the need for nursing care.

Three variations in nursing systems have been recognized by Orem, and descriptions are presented to assist in differentiating among persons as recipients of each subtype of nursing care. Briefly, the wholly compensatory nursing system accommodates persons who are largely to totally dependent on nursing care to meet their care requisites. The partly compensatory nursing system offers a dynamic balance of participation in care between the nurse and the patient. And the supportive-educative nursing system is "confined to decision-making, behavior control, and acquiring knowledge and skills" (Orem, 1985, p. 156).

In the description of phase one (pre-production) self-care, Orem emphasized the acquisition of "empirical" and "antecedent" knowledge as a requirement for health decision-making and the subsequent production of self-care. Use of the Health Decision Model (Eraker, Kirscht & Becker, 1984) in conjunction with Orem's theory strengthened the formulation by describing the impact that perceptual

variables have on the production of health behaviors.

Orem's pre-production phase emphasizes knowledge, while the Health Decision Model identifies perceptions of positive and negative outcomes as the motivating factors in health action-taking. The pre-production phases of both end in decision-making.

Health Decision Model. The Health Decision Model, known at its inception as the Health Belief Model, is a dynamic formulation that evolved from the need to explain preventive health behaviors. To a large extent, the Health Belief Model was derived from the unique phenomenological orientation of Lewin's theories. It was predicated on the assumption that people take action on health care matters based on their perceptions of reality. In its early stages, the Health Belief Model described preventive health behaviors as a function of an individual's 1)perceived suseptibility to an illness, 2)the perceived seriousness of the illness in question, and 3) the ratio of the costs of action to the benefits of action. In addition, internal and external cues to action, such as an individual's perception of bodily state, interpersonal communication, mass media communication, "reminders" from health care providers, etc., were recognized as necessary to somehow instigate preventive health actions (Rosenstock, 1974).

The Health Belief Model was quickly broadened to include explanation of illness and sick role behaviors (Becker, 1974; Kirscht, 1974). Questions about the

usefulness of the model were acknowledged (Can existing health beliefs be activated? Can maladaptive beliefs be altered, making appropriate behavior more likely?) and certain demographic and socio-psychological factors (age, sex, income, education) were identified as affecting the production of health behaviors (Kirscht, 1974; Rosenstock, 1974; Stine and Chuaqui, 1969).

The Health Decision Model evolved from the synthesis of the Health Belief Model, Decision Analysis and Behavior Decision Theory (Eraker, Kirscht and Becker, 1984). The current model provides a more comprehensive system for describing and explaining health decisions and resultant behavior. In addition to general and specific health beliefs, Eraker, Kirscht and Becker (1984) identified "modifying factors" which help to clarify the complex relationship between health beliefs/health decision-making and health behavior: patient's preferences for care received, patient's past experience, patient's knowledge, and social interactions. These modifying factors are subject to intervention and the authors stressed that health beliefs can be assessed and modified in the interest of promoting optimal health activity.

Figure 2 demonstrates the conceptual comparability of Orem's Self-Care Deficit Theory and the Health Decision Model. Both constructions describe an intellectual (pre-production) phase of health action-taking as well as the actual production of health behaviors. Another strong

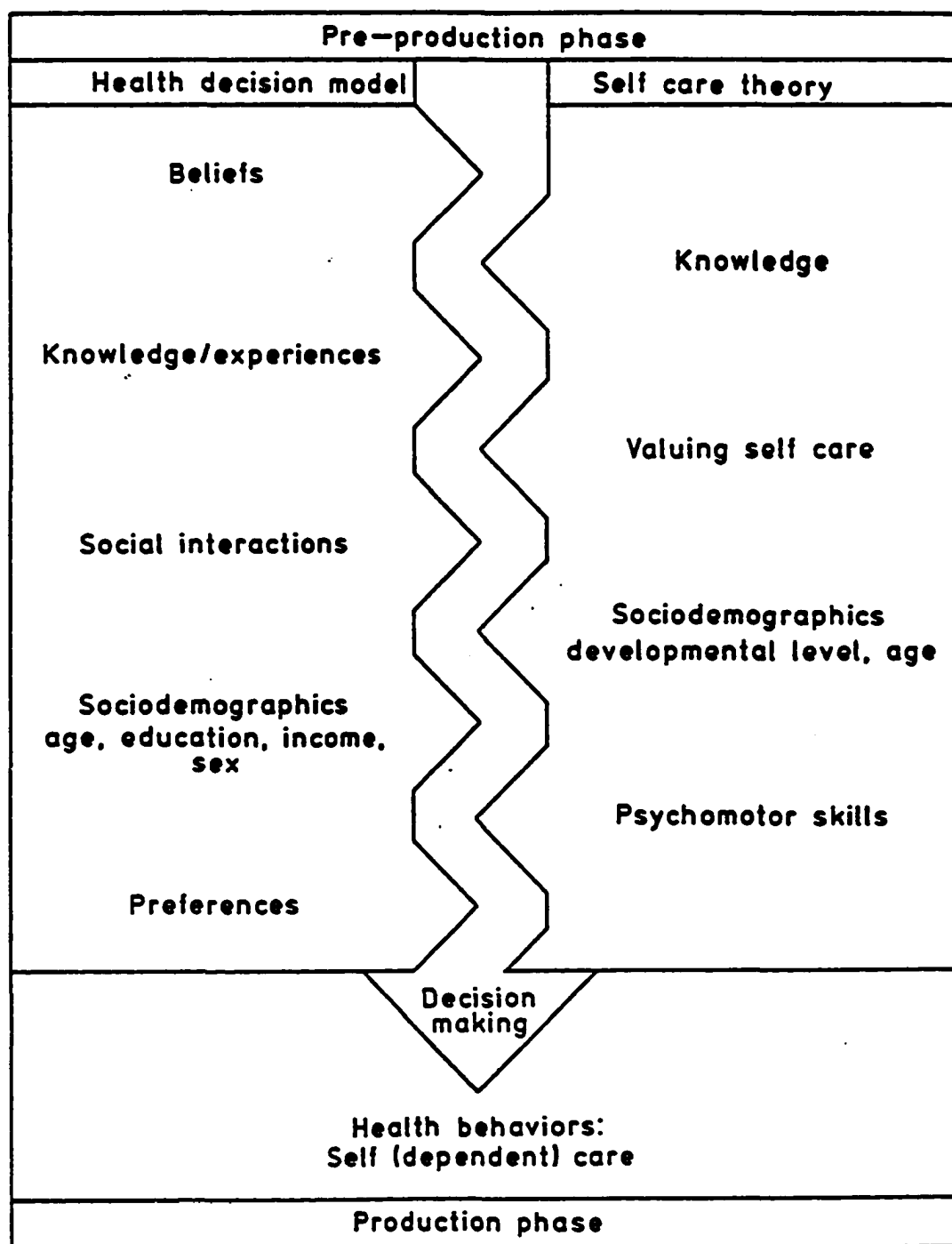


Figure 2. Composite Model: Self Care Theory and the Health Decision Model

point of similarity is that the pre-production phases of both end with decision-making.

Orem's Self-Care Deficit Theory of Nursing and the Health Decision Model both identify knowledge as an important component in the pre-production phase of health activity. However, knowledge is only part of health action-taking. The complexity of the intellectual phase is more fully described by perceptual and attitudinal variables from the HDM. Orem places relatively more emphasis on knowledge, whereas in the HDM, knowledge is considered to be a less important determinant of action (Eraker, Kirscht and Becker, 1984). The outcome or product of the intellectual activity is some kind of health behavior ie. self or dependent care.

Kirscht (1974) stated that "any specific behavior is multiply determined" (p. 457). The perceptual and qualitative nature of the Health Decision Model rightfully promotes the uniqueness and individuality of people, their thought processes and consequent behaviors, but still confers a degree of managability to the complicated dynamics of human behavior. Orem's theory provided a pragmatic approach for describing and explaining operational relationships with respect to the existence or need for health care knowledge and skills. This explanatory facet is strengthened by inclusion of the affective variables outlined in the Health Decision Model. Clearly, many aspects of behavioral research require a

strong foothold in phenomenology, ie. the perceptions, interpretations and decisions of individuals.

Figure 3 illustrates a composite model of the variables included in Orem's Self-Care Deficit Theory of Nursing and the Health Decision Model. Common pre-production variables in both Self-Care Theory and the Health Decision Model are knowledge and identified sociodemographic factors which affect health action-taking (age and developmental, income and educational levels). As stated, the sequential nature of pre-production and production phases is compatible, and decision-making is the pivotal element.

Chinn and Jacobs (1983) explained that the assessment of theory range can be effected from knowing the goal(s) of the theory. Broad purposes may be constructed by linking narrower theories and "given the range and complexity of nursing's purposes, a range of breadth and complexity of theories is needed to accomplish such purposes" (Chinn & Jacobs, 1983, p. 126). Theory synthesis may be a way to approach the problems arising from the limited usefulness of narrowly defined or incomplete theories. The universal and enduring nature of the self-care concept demands a macrotheoretical construction for the assessment of needs and the planning and operationalization of care by self (dependent) care agents and the self (dependent) care deficit-induced intervention of nursing agents.

Definition of Terms

Dependent care agency was defined as the ability of an

adult to care for dependent members of the family.

"Agency" has been defined by the Nursing Development Conference Group (1979) as "a means for exerting power" (p. 181). Concomitantly, the person exercising power is known as an "agent". To date, no measure of the dependent care agency construct has been found in the literature. For the purpose of this research, parents were seen as the dependent care agents acting on behalf of their school-age children, who were defined as children six to thirteen years of age.

Health education in the home was conceptualized as any information, exclusive of skills, that is imparted from parent to child in the normal course of family living in response to identified or anticipated (actual or potential) health education needs.

Assumptions and Limitations

Assumptions. There were several assumptions associated with this research. The first was that health education should and does occur in the home. It was assumed that parents recognize the need to educate their children on a broad spectrum of health matters, and that they are willing to accept the role of health educator and participate to some extent in the health education of their children.

Parental perceptions were utilized as a means of assessing parental agency. It was assumed that parents' self-reported perceptions regarding health knowledge and attitudes were an accurate and valid measure of the agency

(capability) construct.

A final assumption was that parents' self-reported perceptions of health knowledge and attitudes were meaningful predictors of health behaviors, in this case, the actual occurrence of health education in the home. It has been postulated that a possible short-coming of the Health Decision Model, both practically and theoretically, is the failure of some individuals to behave in a manner that is consistent with their beliefs (Eraker, Kirscht and Becker, 1984). Fishbein (1973) described components of the "attitude-behavior link" as being predictive of behavioral intention, which is "the immediate psychological precursor of behavior" (p. 458). In their Theory of Reasoned Action, Ajzen and Fishbein (1980) expand the concept of behavior as a consequence of intent. Production of health behaviors is described in terms of the individual's perception of social pressure to perform a particular behavior, and their beliefs about the probable outcome, either positive or negative of that behavior. This theory also supports the concept of a perceptual component of the pre-production phase of health action-taking proposed by the HDM. Additional research is needed to clarify relationships and strengthen the predictive ability of the theory.

Limitations. A limitation of the study was that the content and actual occurrence of health education in the home was not measured. The potential for it to occur was measured via 1) parents' beliefs that their children were

suseptible to health-derived limitations as a consequence of health education deficits, and 2) parents' knowledge on health topics appropriate for school-age children.

Knowledge is the factual, social or moral/spiritual information parents are capable of transmitting to their children in an attempt to avoid health deficits related to inadequate health information or misinformation or inappropriate health beliefs. Finally, parental skills associated with self (dependent) care were not measured.

Review of the Literature

Self care. In response to the currently high health-care consciousness, lay persons have assumed responsibility as their own primary health resource, and self-care has emerged as an important method of health care management. Levin (1977) identified several precipitating factors to the renewed interest in self-care.

With a rise in chronic morbidity and a decline in acute morbidity, high-technology acute care systems are in less demand, resulting in new emphasis on lay resources in the management of chronic health problems. Intervention for health conditions related to human behavior and life styles "are dependent on the risk preferences of individuals" (Levin, 1977, p. 117). Also, personal experience regarding "the limits of medicine" may promote reliance on self health care techniques. This may hold especially true for persons who are aware of the potential negative side effects of professional care, inducing them to pursue

alternative methods of health care. Finally, "the rising tide of populism" may be dictating more personal control in many aspects of living, including health care. Levin stated that "the effective limits of self-care are unknown ... but are theoretically limited only by society's interest in educational investments in self-care" (Levin, 1977, p. 118).

In discussing changes in health care ideology, Pratt (1977) suggested the "energized family structure" as a predictor of a family's success in obtaining appropriate medical services and practicing good quality health care on their own. Members of these energized families actively sought and checked health information, made discriminating choices and negotiated assertively with the health care system. In all likelihood, they constitute a minority, but may have become more prominent as a consequence of the "business-bureaucratic structure" of the health care delivery system. The author advocated organized political action by families in the interest of obtaining support for their self-care activities.

Although empirical research on the dependent care agency construct has not been found in the literature, two instruments have been developed to measure self-care agency (Denyes, 1981; Kearney and Fleisher 1979). Kearney and Fleisher developed a 43-item five-point Likert scale questionnaire which measure "the exercise of self-care agency" in young adults. The use of the word "exercise"

here is misleading. The implication is that this instrument does not truly measure agency (capability), but rather, the actual production of health behaviors. However, cognitive and affective factors representative of the capacity for action, not the action itself, were identified. Personal traits which were found to be indicators of agency were identified as 1) an attitude of responsibility for self, 2) motivation to care for self, 3) the application of knowledge to self-care, 4) the valuing of health priorities, and 5) high self-esteem.

Denyes used a modified phenomenological approach to test the agency construct by designing a close-ended questionnaire to elicit adolescents' perceptions of their own capacity for self health care. The final 35-item seven-point Likert scale instrument was intended for use with well 14-18 year olds. A posteriori factorization yielded six agency-related factors which reflected some of those identified in the Kearney and Fleisher study. The factors were defined as 1)ego strength and health decision-making capability, 2)relative valuing of health, 3)health knowledge and decision-making experience, 4)physical energy levels, 5)feelings, and 6)attention to health.

Although research on Orem's self-care theory has focused primarily on the areas of chronic illness and rehabilitation (Anna, Christensen, Hohon, Ord & Wells, 1978; Backsheider, 1974; Kinlein, 1977; Kuriansky, Gurland,

Fleiss & Cowan, 1976), the Denyes instrument (1981) was designed for use by healthy adolescents. This concentration on the well adolescent as a self-care agent has importance for the redirection of theory application toward health maintenance and health promotion as well as for targeting the family as a focus of care.

More recently, Denyes (1983) has undertaken a literature search spanning 30 years in an effort to identify the scope and content of research pertaining to school-age children and adolescents. The review was organized to include descriptions of the child/adolescent's perceptions of and responses to self, life events and environment, as well as therapeutic nursing interventions with children and adolescents. Additionally, Denyes commented on the conceptual findings, strengths, limitations, methodology and "potential for generation of knowledge that is practice-relevant" (Denyas, 1983, p. 28).

Approximately one hundred studies were reviewed. A majority were devoted to the description of the child or adolescent's responses to chronic illness. A particular lack of data regarding nursing interventions to increase self-care capabilities was noted, along with limited attention to nursing intervention in school settings. (Denyas, 1983)

Denyas reported that although the quality of nursing research had improved considerably from 1952 to 1982, the bulk of publications reviewed did not specify a conceptual

framework. In addition to this, data collection and analysis techniques were "unclear" and reliability and validity of research instruments were "questionable". More attention to methodology and theoretical base was advised, as well as increased emphasis on the concept of health promotion. Denyes states that the "general health practices and health status of youth have been virtually unexplored" (Denyas, 1983; pg. 48).

Health Decision Model. There has been some limited family-focused research generated in the course of the development of the Health Decision Model (Becker, 1974; Kirscht, 1974; Kirscht, Becker and Eveland, 1974; Rosenstock, 1974). Some preventive health and illness behaviors of mothers as a response to the perceived health status of their children have been objectified, commonalities in behaviors have been identified and, not surprisingly, new questions have been raised.

Although much of this research deals with illness or sick role behaviors, the Health Belief Model was originally devised to explain preventive behaviors, and the field for exploration of preventive health behavior within families, including the essential educative dimensions, is wide open. Rosenstock (1974), in acknowledging the psychosocial factors which condition individual's perceptions and perceived benefits of action, questions whether the improvement of health in a healthy person serves as a factor motivating preventive health activity. Current

trends in nutritional awareness and the recognition of the value of physical exercise, stress management and an overall healthful life style would seem to affirm that health improvement is indeed a motivating factor. This resurgence of personal health needs assessment and decision-making can be cultivated by renewed educational efforts and the availability and accessibility of relevant health information. Rosenstock (1974) suggested altering physical and social environments, a form of behavior modification, to teach or eliminate health behaviors, citing as an example, health education of school-age children with the cooperation of parents and schools.

In the past, empirical testing of the Health Belief Model included the use of data collection instruments with questionable reliability and validity. Consequently, the data generated were also suspect (Champion, 1984). Development of valid and reliable tools to measure the Health Belief Model constructs is valuable to nursing, as information obtained from such instruments is directly applicable to nursing practice. Champion suggested that instrument development research projects include hypotheses specifically formulated to test reliability and construct validity.

Health education. A final factor to consider when speaking of health education for children is the role of the public school system. Comprehensive health education, as defined by the National Professional School Health

Education Organizations, is "health education in a school setting that is planned and carried out with the purpose of maintaining, reinforcing or enhancing the health, health-related skills and health attitudes and practices of children and youth"(NPSHEO, 1984; pg. 312). Three components traditionally represented in school health programs are health education, health services and a healthful school environment. Although all states legislate support for health services and a healthful school environment, "comprehensive school health education exists nationwide far more in theory than in practice" (p. 312).

The NPSHEO has submitted criteria for the design of comprehensive school health education which include: 1) the entire spectrum of health needs, not just disease identification, 2) instruction providing cognitive information, behavioral skills and affective experiences, 3) a curriculum based on current and emerging health concepts and social issues, 4) opportunities for students to develop and demonstrate health knowledge, attitudes and skills, 5) integration of the physical, mental, emotional and social dimensions of health, 6) specific goals and objectives, and 9) sufficient resources, money, materials, time and personnel. In addition, recommended program content for school health education includes topics in community health, consumer health, environmental health, family life, growth and development, nutritional health,

personal health, prevention and control of disease, safety and accident prevention, and substance use and abuse (DuShaw, 1984; NPSHEO, 1984). The benefits of health counseling as an alternative to health education was presented (Bonagura, McLaughlin and Sussman, 1984) with obvious implications for parents to act in the role of health counselor, providing a more intimate and contiguous health education environment.

Rosenstock and Kirscht (1974) stated that "the acquisition of appropriate health beliefs and practices should, in principle, be simpler in childhood than in adulthood. We must bring to bear our educational expertise . . . based on good social-psychological theory . . . during the early socialization years, to produce more preventively oriented children" (p. 473). The challenge for parents, educators and health professionals is to act in concert for the purpose of providing consistent and comprehensive health education for children. Yet, the lack of research interest and data collection methods inhibits efforts in this direction.

In summary, there are broad implications for self-care as a component of contemporary health care for individuals and families (Levin, 1977; Pratt, 1977). The concept of self-care has been developed as a nursing theory but a need exists for verification of nursing theory through research (Anna, Christensen, Hohon, Ord & Wells, 1978; Backsheider, 1974; Denyes, 1983, 1981; Kearney and Fleisher, 1979;

Kinlein, 1977; Kuriansky, Gurland, Fleiss & Cowan, 1976; Nursing Development Conference Group, 1979; Orem, 1985). Although the self-care framework is reasonably complete with respect to the production of health behaviors by individuals and the design of nursing systems to augment care capabilities, the Health Decision Model has more thoroughly described the perceptual variables that affect health action-taking (Eraker, Kirscht and Becker, 1984; Becker, 1974; Kirscht, 1974; Rosenstock, 1974).

A review of research on both Orem's Self-Care Theory and the Health Decision Model disclosed the relative absence of validated data collection instruments (Champion, 1984; Denyes, 1983). Literature and research specific to the dependent care agency construct was not found. Although health education for children is an obvious dimension of the construct, literature regarding children's health education has been generated almost exclusively by health educators from the viewpoint of health education as it exists in the public school system (Bonagura, McLaughlin and Sussman, 1984; DuShaw, 1984; NPSHEO, 1984). It is important to note that in planning these school health education programs, parents were not consulted, either to approve content or to establish a baseline for planning.

This study was undertaken to development an instrument to elucidate the potential role of the parent as a health educator in the home. A second objective was to test the dimensions of Orem's dependent care agency construct, which

has, to date, not been studied. In addition, the focus of this research was wellness and prevention behaviors, areas which represent a substantial share of nursing's professional territory. In summary, the results of this study should contribute to nursing science through the investigation of an untested construct of a nursing theory.

Hypotheses

1) Internal consistency reliability (Cronbach's alpha) will be .70 or greater for self-reported knowledge and beliefs about selected health topics, and parents' perceptions of ego strength and health values.

2) Dependent care agency will be composed of the following four mutually exclusive factors verified through factor analysis: perceived knowledge with regard to selected health topics, beliefs of the importance of education with regard to selected health topics, ego strength and health values.

Chapter 2 discusses the research design and the sequential steps in the development of the research instrument. It also includes a description of the sample, the research setting and the data collection procedures.

Chapter 2

Methodology

Design

This instrument development study employed a descriptive survey design. In non-experimental research, variables are not manipulated. One class of non-experimental research, descriptive research, is concerned with observation and documentation of a particular phenomenon. Factors believed to be influential in health action-taking were incorporated into a research instrument (Health Education Questionnaire). This survey questionnaire was intended for use in investigating the characteristics (knowledge, beliefs, values, strength) of the sample, ie. parents of school-age children (Polit and Hungler, 1983).

As a methodological research study, results are not applicative in nature, that is, the information derived from such research is not directly applicable to nursing situations. The intent is to develop, validate and evaluate data collection methods, and, as Polit and Hungler (1983) pointed out, "it is virtually impossible to conduct outstanding and meaningful research on a substantive topic with inadequate research tools" (p. 215).

Sample

The target population for this study was all parents of school-age children. The accessible population was parents of school-age children enrolled in one public elementary school located in a large mid-Atlantic seaboard city. One hundred fifty-four questionnaires were distributed via students to parents participating in the study.

Non-probability sampling in the form of a convenience sample was used. Non-probability sampling is the selection of subjects from a population using non-random procedures (Polit and Hungler, 1983). The convenience sample entails the use of the most readily available subjects for participation in the study. The researcher believed that accessing the targeted population through the public school system would most likely yield a representative sample. As stated, an advantage of the convenience sample is its accessibility. The limitations are that there is no way to assure that every element of the population has the same chance of being selected, and that research findings must be generalized with caution (Polit and Hungler, 1983).

Setting

An application to conduct research was made to the Director of Planning, Assessment and Resource Development of a local public school system. The proposed study was reviewed and deemed appropriate and acceptable, in that the potential findings were considered to be valuable to school officials for the planning of health education programs.

However, reservations were verbalized concerning the length of the original instrument, which was subsequently shortened based on the results of two pilot studies. Following approval, a large elementary school (enrollment 1077) was selected by the director as the site for the distribution of questionnaires.

Human Subjects Considerations

Prior to the data collection, the proposed study was approved by the Committee for the Protection of Human Subjects of the School of Nursing at Old Dominion University. Subsequently, booklets containing the questionnaire (Appendix E) preceded by a letter of explanation to parents (Appendix A) were distributed to students who then carried them home to parent-participants. Parents were advised that responses to the questionnaires would be kept confidential, that only the overall results would be reported and that it would not be possible to identify individual participants in the reported results. It was also explained that completion of the questionnaire constituted their consent to participate. A telephone number was provided for participants who might have remaining unanswered questions. Completed questionnaires were returned to school by students and deposited directly into a locked box located in the central office. The researcher was the only person having access to the contents of the box.

Risks associated with participation in the study were

minimal. There might have been a slight psychological risk of parents experiencing feelings of inadequacy with regard to their knowledge of health topics following participation in the study. However, the potential for subsequent criminal or civil suits were assessed to be minimal.

The potential benefits of participation were seen to greatly outweigh possible risks. These included, 1) increasing parental awareness of the scope of health knowledge that is desirable for the health education of school-age children, and, 2) providing a baseline assessment of the health education needs that exist within families so that educators and health professionals may plan appropriate health education programs.

Instrument

Format. A self-administered questionnaire was used as the data collection method. Advantages of this method include the decreased likelihood of interviewer bias, the protection of participants' anonymity and, the fact that it is less costly and time-consuming than other data collection techniques (Polit and Hungler, 1983). A major disadvantage is the potential for a low response rate for self-scored questionnaires when they are mailed back to the researcher. A carry-back response mode was prescribed for this study. It was estimated by the school system director that the mail-back response rate in the participating school system was 30-35%, while the carry-back response rate was nearly 95%.

Construction. The construction of the tool began with consideration of the individual items as well as the factors isolated from Denyes' instrument development project to measure self-care agency in adolescents (Denyes, 1981). The number of cognitive variables was expanded considerably over the number included in the Denyes instrument, to provide respondents with a clear conception of the scope of health education for children. The researcher's conceptualization of health education from a physical, psychosocial and developmental standpoint was validated through a high degree of comparability with published reports of the health topics addressed through comprehensive school health education programs (NPSHEO, 1984; DuShaw, 1984). The purpose of the cognitive items was to elicit parents' perceptions of the knowledge they possessed with respect to the selected health topics. This was viewed as the information they were capable of imparting to their children in any attempt at health education in the home.

Mirroring the cognitive items, affective items were developed in an attempt to determine a parent's belief of the importance of educating their children with respect to these same selected health topics. 'Belief of importance' was conceptualized by the researcher to be a composite variable reflecting the perceived susceptibility, perceived seriousness and perceived costs and benefits proposed in the Health Decision Model (Eraker, Kirscht and Becker,

1984). These affective items were believed to reflect, in part, the "health valuing" and "attention to health" factors isolated from Denyes' instrument. In addition to the cognitive and affective variables, items reflecting physical strength, ego strength and valuing health were included in the initial instrument (Appendix B).

A close-ended response format was selected and a seven-point Likert scale of responses was developed. Administration and analysis are facilitated with this response format. Other advantages include increased clarity to participants due to the provision of specific options, time efficiency, and increased frequency of responses to "personal" items (Polit and Hungler, 1983).

The data collection instrument included six demographic variables to determine participants' age, number and ages of children, educational level, income level, work experience in a health-related field and the participant's relationship to the child. In the initial instrument, the sequencing of items proceeded from ego strength, responsibility and physical strength variables, to cognitive variables and, finally, to the affective variables. A pilot study was conducted to ascertain face and content validity and reliability of the initial 87-item instrument (Appendix B).

Reliability and Validity. The two primary concerns in instrument development research are that the instrument perform reliably and that it is a valid measure.

According to Nunnally, a measure is reliable "to the extent . . . (that) measurement error is slight" (Nunnally, 1967, p. 172). Measurement errors are always present to some degree, but a reliable instrument is capable of repeating a specified measurement task with minimal and predictable associated error (Nunnally, 1967). The type of reliability of importance in this study was internal consistency reliability, which is the extent that individual items are measuring the same characteristic (Polit & Hungler, 1983). Coefficient alpha (Cronbach's alpha) was the analytic technique used to determine the internal consistency reliability of the Health Education Questionnaire (HEQ).

"Reliability is a necessary but not sufficient condition for validity" (Nunnally, 1967, p. 173). An instrument is valid if it measures what it was intended to measure. Nunnally states that "validation always requires empirical investigation", and that it is "an unending process" (Nunnally, 1967, p. 75).

The purpose of psychological measures is to 1) establish a predictive relationship between variables (predictive validity), 2) adequately represent the content area (content validity), and 3) measure psychological traits (construct validity) (Nunnally, 1967). Although the ultimate purpose of the HEQ would be to predict the occurrence and quality of health education undertaken by parents in the home setting, the functional consequence of

parental knowledge and attitudes was not a focus of this project, therefore, it was not possible to establish predictive (criterion-related) validity.

Content validity refers to the adequate and appropriate scope of the topic area as represented by the measurement instrument. Content validity was sought for the HEQ based on 1) a review by parents of school-age children (N=18), and 2) comparison of the scope of representative health topics with that of established comprehensive health education programs.

Establishing construct validity is "one of the most difficult and challenging tasks that a researcher faces" (Polit & Hungler, 1983, p. 397). Logical analysis of the conceptual breadth of the tool permits identification of individual factors and their interrelationships, which define the construct. Nunnally stated that the more abstract the variable under investigation, the more necessary and difficult it is to validate (Nunnally, 1967). Construct validity for the HEQ was explored through factor analysis, a method of identifying clusters of items representing various dimensions of the overall construct. This will be discussed in more detail in Chapter III.

Pilot study: phase one. Thirteen women who met the criteria for participation in the study (parents of school-age children) responded to the first draft of the questionnaire. Participants were encouraged to give written and/or verbal criticism of the instrument and

several revisions were made based on participant feedback.

Several participants believed that there were too many scale response options, and the decision was made to use a five-point scale. Four items pertaining to physical strength associated with health care-taking showed no variability in responses. All thirteen participants reported that they always had the physical strength to take care of their children's health and these four items were eliminated. Many of the ego strength and valuing health items were perceived as ambiguous and/or redundant, and twenty-two of these items were also eliminated. Twelve items were reworded and five new items were constructed to more clearly convey the researcher's intention to measure a parent's responses to health education of children rather than the more generalized activity of health care.

The cognitive and affective variables seemed to perform well. Four cognitive items related to sex (venereal disease, birth control and teenage pregnancy) were perceived to be inappropriate for the age group in question, and these were eliminated. Additionally, ten items were combined to form five composite items. For example, individual items relating to rest and exercise were combined into one "rest and exercise" item. The overall achievement in this first revision was improved item as well as instrument clarity.

Pilot study: phase two. A second pilot study was conducted with ten participants to test the revised 57-item

instrument (Appendix C). Approximately half of these participants had responded in the first pilot study and these parents reported a perceived improvement in the questionnaire with regard to interpretability. The five-point Likert scale was more acceptable to participants. Reliability testing of this 57-item measure using Cronbach's alpha yielded a coefficient of .93 overall. Nine items with corrected item-total correlations less than .10 were eliminated. The resulting 48-item questionnaire had an alpha reliability coefficient of .94.

A final revision was made regarding the sequencing of items. This was a result of some residual item ambiguity perceived by participants with regard to the ego strength and responsibility items which were located at the front of the questionnaire. It was believed that these items might be better placed farther along in the questionnaire, and that the cognitive items, which clearly delineated the scope of the health topics under consideration should be placed directly after the demographic variables to help acquaint participants with the survey content (ie. physical, psychosocial and developmental health topics). In addition to this, the researcher believed this sequence change would distance the cognitive items from the affective items thereby minimizing carry-over responses to familiar content.

Procedure

The principal of the school selected for participation

in the study was contacted by the researcher and the purpose of the research, questionnaire content and distribution and collection methods were discussed. A letter to teachers whose classes were selected for participation was prepared explaining the purpose of the research and describing their role in the data collection process (Appendix D).

One hundred fifty-four of the revised 54-item questionnaires (Appendix E) were distributed by teachers to students in grades one through six with approximately equal numbers of questionnaires distributed in each class. The children were instructed by their teachers to carry the questionnaires home to parents and return the completed questionnaires to a locked collection box located in the central office by the end of the week.

Chapter 3 discusses the analysis of data using the Statistical Package for the Social Sciences and the IBM 4381 computer. Characteristics of the sample and the results of hypothesis testing are presented.

Chapter 3

Results

As a significant piece of the dependent care agency construct, the parental function of health educator in the home is assumed as part of the myriad duties of parents. However systematic investigation of the enabling factors related to this distinct and substantial aspect of parenting has not occurred. No reliable and valid data collection instruments exist which can evaluate a parent's capacity for health action-taking on behalf of a dependent child. The hypotheses developed for this study predicted the characteristics of a new data collection instrument designed to explore a piece of the dependent care agency construct, ie., the conceptual dimensions of the role of parents as health educators in the home.

Hypothesis I stated that instrument reliability (coefficient alpha) would meet or exceed .70 for the overall measurement of a parent's capacity for the health education of school-age children, as well as individual item subsets related to the proposed factors. Hypothesis II predicted that a four factor model would emerge subsequent to factor analysis and that these factors would reflect parental health knowledge, beliefs, values and ego strength relevant to their perceived role as a health

educator in the home. Demographic variables previously cited as determinants in health action-taking by Health Decision Model researchers were included in the tool. However, hypotheses were not formulated regarding these variables.

The Sample

Of the 154 HEQ's distributed to parents of children in grades one through six, 97 completed questionnaires were returned for a response rate of 63%. Participant responses to items one through six provided demographic information on respondents, ie. age, number of children, educational level, work experience in a health-related field, income level, and relationship to child.

Table 1 illustrates the data obtained from responses to the demographic items. The median age of parent-participants was 36-40 years old. The modal number of children reported by respondents was two. The median educational level response of participants was "college graduate". Sixty-five percent of respondents reported no work experience in a health-related field. The median response for income level was for persons with an annual income of \$35,001-45,000/year. Finally, the majority of respondents to the HEQ were mothers (82.5%). A composite description of a typical participant derived from responses to the demographic items was that of a 36-40 year old mother of two children, who was a college graduate with an annual family income of \$35,001-45,000 and no work

Table 1

Social and Demographic Characteristics of Parent-Participants

Characteristic	Response Scale					
	1	2	3	4	5	6
Age (N=97)	less than 26 years 0(0%)	26-30 years 11(11%)	31-35 years 38(39%)	36-40 years 40(41%)	more than 40 years 8(8%)	
Number of Children (N=97)	1 11(11%)	2 50(52%)	3 23(24%)	4 10(10%)	more than 4 2(2%)	
Educational Level (N=97)	not a high school graduate 3(3%)	high school graduate 17(18%)	some college 29(30%)	college graduate 41(42%)	post graduate 7(7%)	
Work Experience in a Health- Related Field	No 63(65%)	Yes 29(30%)				
Income Level (N=90)	less than \$15,000 4(4%)	\$15,000- \$25,000 13(13%)	\$25,001- \$35,000 20(21%)	\$35,001- \$45,000 31(32%)	\$45,001- \$55,000 13(14%)	more than \$55,000 8(8%)
Relationship to Child (N=97)	mother 80(83%)	father 11(11%)	both parents 4(4%)	other 2(2%)		

experience in a health-related field.

Reliability of Measure and Constructs

Hypothesis I stated that internal consistency reliability of the HEQ would be .70 or greater. Coefficient alpha (Cronbach's alpha) was the analytical procedure used to determine instrument reliability. Hull and Nie (1981) stated that coefficient alpha may be the most widely used measure of reliability. As a test of internal consistency or homogeneity, coefficient alpha provides the most extensive evaluation of test items, as all possible combinations of items (split-halves) are correlated (Polit and Hungler, 1983). In addition, Nunnally (1967) stated that coefficient alpha is a highly useful measure of reliability "since the major source of measurement error is because of the sampling of content" (p. 211).

Reliability testing was performed on the 97 responses to the 48-item HEQ, yielding an overall alpha coefficient of .92. Additionally, individual reliability coefficients were obtained for the two conceptual dimensions of the HEQ which had been directly inferred from the theoretical framework. As the intellectual phase of health action-taking was believed to be comprised of distinct cognitive and affective components, subsets of items related to these conceptual elements were analyzed separately for reliability. Seventeen items designed to measure parental knowledge, the cognitive component,

yielded an alpha coefficient of .88, the 31 items comprising the affective component (health beliefs, values and ego strength) yielded an alpha coefficient of .92. Thus, the overall measure as well as the separate cognitive and affective components of the tool demonstrated an acceptable level of reliability.

Construct Validation: Factor Analysis

Hypothesis II stated that the dependent care agency construct as it related to health education in the home would be composed of four, mutually exclusive factors: perceived knowledge regarding selected health topics, beliefs of the importance of educating children regarding selected health topics, ego strength and health values. Table 2 identifies each instrument item by its conceptual classification, i.e. perceived knowledge, ego strength, health values or perceived importance. Although the major conceptual components of the pre-production phase were described as cognitive and affective, it was believed that health beliefs, values and ego strength, subsumed under the affective component would be sufficiently distinct dimensions of the construct that they would constitute separate independent factors. In order to test this hypothesis, factor analysis with Varimax (orthogonal) rotation using the Statistical Package for the Social Sciences (Hull & Nie, 1981) was performed on data obtained from the 97 respondents who completed the 48-item questionnaire.

Table 2

Health Education Questionnaire Items With Conceptual
Classifications

Item	Classification
1. knowledge of body systems	perceived knowledge
2. knowledge of personal hygiene	perceived knowledge
3. knowledge of safety issues	perceived knowledge
4. knowledge of dental hygiene	perceived knowledge
5. knowledge of nutrition	perceived knowledge
6. knowledge of exercise and rest	perceived knowledge
7. knowledge of contagious disease and immunization	perceived knowledge
8. knowledge of counseling on death	perceived knowledge
9. knowledge of child's peer relations	perceived knowledge
10. knowledge of sex education	perceived knowledge
11. knowledge of child's self- concept	perceived knowledge
12. knowledge of alcohol abuse	perceived knowledge
13. knowledge of smoking and health	perceived knowledge
14. knowledge of drug abuse	perceived knowledge

Table 2 (cont.)

Item	Classification
15. maintaining and/or improving health	health values
16. awareness of child's sexuality	perceived knowledge
17. awareness of child abuse	perceived knowledge
18. awareness of family integrity	perceived knowledge
19. lack of health information	perceived knowledge
20. awareness of health education needs	health values
21. consequences of lack of health information	health values
22. ability to get health information	ego strength
23. responsibility for child's health education	ego strength
24. seeking health information for child	health values
25. responsibility for child's health	ego strength
26. parent best person to educate child	ego strength
27. importance of immunization	perceived importance
28. importance of peer relations	perceived importance
29. importance of dental check-ups	perceived importance

Table 2 (cont.)

Item	Classification
30. importance of nutrition	perceived importance
31. importance of physical health	perceived importance
32. importance of emotional health	perceived importance
33. importance of physical check-ups	perceived importance
34. importance of personal hygiene	perceived importance
35. importance of rest and exercise	perceived importance
36. importance of education (puberty)	perceived importance
37. importance of education (pregnancy)	perceived importance
38. importance of body functions	perceived importance
39. importance of immunization	perceived importance
40. importance of death	perceived importance
41. importance of child abuse	perceived importance
42. importance of self-concept	perceived importance
43. importance of alcohol abuse	perceived importance
44. importance of divorce	perceived importance
45. importance of drug abuse	perceived importance
46. importance of safety	perceived importance
47. importance of smoking	perceived importance
48. importance of health education role of parent	perceived importance

Factor analyses represent a series of statistical techniques for the purpose of reducing a large set of variables into smaller subsets of items. These subsets, or factors, are each composed of groups of items which are related as "unified concepts" (Polit & Hungler, 1983, p.549) or "hypothetical entities" (Kerlinger, 1979, p. 180). Nunnally (1967) stated that factor analysis may be used to test hypotheses regarding the existence of presupposed theoretical constructs or to search for constructs in a group of variables.

A stepwise approach to factor analysis has been suggested as a systematic method for accomplishing these complex data analyses (Polit & Hungler, 1983; Nunnally, 1967). Initially, factors are extracted from a large pool of variables by identifying those items which correlate highly with one another. The number of factors extracted has been described by Polit and Hungler (1983) as a "semi-subjective process" (p. 550). A maximum amount of explained variance is calculated for each factor. Successive factors account for progressively lesser amounts of the remaining variance until any additional factors created from the remaining unexplained variance would not be meaningful. For the purpose of explicating the relative significance of factors extracted, eigenvalues are assigned to all factors identified. These eigenvalues represent the sum of the squared weights for each factor, and a value of 1.00 has been accepted as the point below which unexplained

variance will not contribute meaningfully to the interpretation of constructs (Polit & Hungler, 1983).

The result of this first step is a factor matrix, in which each variable and its corresponding factor weight (or loading) is identified. Kerlinger (1979) explained that factor loadings are "indices that report the degree of relation between each test and the presumed underlying dimension or factor" (p. 189). A significant relationship between a variable and a factor is demonstrated by factor loadings of at least .30-.40 (Polit & Hungler, 1983; Kerlinger, 1979).

Since the initial factor matrix frequently has little conceptual meaning for a researcher, the next step is the rotation of factors. Rotated factors are linear combinations of the original factors. The explained variance is unchanged, but the spatial relationships among factors are such that variables cluster together in patterns which are interpretable to the researcher. A different pattern of factor loadings will be apparent following rotation, and it is these values which are analyzed in the interest of construct validation. (Polit & Hungler, 1983; Nunnally 1967)

Both orthogonal and oblique rotations were performed as part of the early factoring process. Orthogonal rotation is a class of the rotation procedure which assumes that there are no relationships among factors; consequently, factors are constrained to cluster at 90 degree angles in

relation to one another. Oblique rotation permits a departure from this restriction, allowing that some relationships among factors may exist (Polit & Hungler, 1983).

The Twelve-Factor Model

Data obtained from responses to the HEQ were subjected to classical factor analysis using orthogonal (Varimax) and oblique rotations. As the oblique rotation did not contribute to the interpretation of factors, the factoring procedure continued using only orthogonal rotations. Initially, twelve factors with eigenvalues greater than 1.00 were identified, explaining 72.2% of the total variance among responses to instrument items. Only individual items with factor loadings of .40 or greater were considered to have a degree of relationship with designated factors, which was acceptable to the researcher. The comparatively stringent criterion for factor inclusion was in the interest of developing a parsimonious final form of the tool with substantial item-factor relationships.

Item number 17, which measured the parent's perceived knowledge of the child's feelings of self-esteem, had a maximum factor loading of .35, and was the only variable out of the 48 which did not meet the criterion for inclusion on any of the twelve designated factors. The twelve-factor matrix which emerged with orthogonal factor rotation was not considered to be interpretable, based on

Table 3

Orthogonal Rotation of IIEQ Responses: The Twelve-Factor Model

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12
V01	.03	.23	.16	.03	-.54	.21	.03	.24	.03	.05	.19	.04
V02	.02	.27	.16	.17	-.22	.20	.26	.18	.06	-.11	.58	-.00
V03	.23	.44	.19	-.22	-.05	.25	.32	.36	.12	.00	.15	-.11
V04	.09	.38	.18	.11	.05	.38	.07	.06	-.03	-.06	.42	.11
V05	.13	.37	.19	.08	-.13	.66	.02	-.06	.07	.03	.02	.14
V06	-.02	.19	.04	-.08	-.01	.09	.09	.05	-.03	.03	.05	-.02
V07	.22	.45	.28	.07	-.11	.37	.20	-.25	.00	.01	.02	.05
V08	.10	.42	.08	.18	.03	.02	.05	.23	-.29	-.04	.12	.00
V09	.07	.53	.22	.21	.11	.13	.28	.10	-.08	-.24	.05	.30
V10	.02	.35	-.11	.49	-.13	.03	.21	.34	-.12	-.08	.33	.13
V11	.18	.24	.35	.22	-.14	.16	.20	.30	-.03	-.02	.00	-.07
V12	-.04	.77	.01	.03	.07	.06	-.08	.13	.03	-.02	-.03	-.05
V13	-.18	.58	.21	.04	.11	.32	.13	.19	-.10	.03	.18	-.06
V14	.03	.80	-.09	.07	-.02	.13	.17	-.08	-.04	.00	.11	.14
V15	.00	.43	.18	.12	-.11	.20	.32	.10	-.12	.17	-.13	.08
V16	.16	.08	.21	.22	.04	.17	.48	.31	-.07	.04	.17	.04
V17	.06	.53	.04	-.00	.13	.19	.17	.06	-.00	.14	.11	.16
V18	.04	.40	.03	.02	.15	-.09	.49	.15	.15	-.10	.33	.12
V19	-.00	-.23	.13	-.24	.03	-.11	-.67	.08	.02	.03	-.02	-.01
V20	.10	.25	.14	.03	.04	.09	.08	.19	.03	.12	.02	.60
V21	.13	-.03	.02	-.01	.00	.05	-.05	.04	-.07	.54	-.03	.04
V22	.17	-.03	.42	-.02	-.06	-.09	.30	-.16	.13	.15	.15	.21
V23	-.02	.13	.55	.25	-.06	.10	.07	.29	-.03	.37	-.03	.13
V24	.18	.23	.22	.12	.16	-.02	.15	.15	-.04	.42	-.02	.07
V25	.14	.21	.76	.01	-.08	.13	-.04	.07	.01	.16	.03	.12
V26	.02	.17	.16	.01	.04	-.06	-.00	.55	.09	.16	.07	.22
V27	.12	-.08	.07	.11	-.02	.00	-.00	.08	.91	-.13	.05	.04
V28	.46	-.13	.35	.01	.08	.02	-.08	.15	.19	.02	.11	.03
V29	.43	.10	.01	.21	.22	-.14	.05	-.15	.24	.24	.32	-.13
V30	.80	.11	.14	.13	.02	.09	-.03	-.01	-.09	.20	-.07	.19
V31	.75	-.02	.16	.13	.01	.02	.10	.12	-.03	.00	-.12	.07
V32	.62	-.09	.36	.28	-.04	.10	.27	.01	.02	-.20	-.05	-.20
V33	.67	.19	-.03	.24	.10	.01	.16	.01	.12	.13	.03	-.06
V34	.74	-.12	.16	.06	.09	-.01	.02	-.04	.02	.15	.20	.03
V35	.70	.11	.08	.08	.09	-.01	.03	.01	.25	.37	.26	.01
V36	.39	.01	.11	.08	.18	.08	.09	-.04	.03	-.01	.03	-.05
V37	.23	.12	.02	.78	.21	-.10	.17	.04	.25	.12	.07	.02
V38	.36	.11	.05	.69	.18	.10	.11	.05	-.08	.02	.05	.07
V39	.39	.05	.12	.18	.42	.04	-.11	.09	-.24	.12	.13	.10
V40	.38	.10	.12	.29	.52	.13	.07	.38	.00	.15	-.00	-.02
V41	.70	.06	.01	.29	.26	.07	.04	.00	-.02	-.14	-.04	.08
V42	.35	.15	.52	.08	.19	.10	.00	.04	.11	-.21	.11	.03
V43	.51	.28	.24	.29	.53	-.12	-.05	.01	.01	-.10	-.04	.10
V44	.23	.15	-.01	.19	.65	.01	.07	.09	.02	.04	.02	.01
V45	.31	.41	.17	.09	.38	-.25	-.06	.01	.09	-.01	.06	.09
V46	.56	.13	.50	-.12	.17	-.03	-.14	.07	-.05	.03	.01	-.13
V47	.37	.38	.05	.20	.40	-.02	-.13	-.17	.13	.13	.15	.03
V48	.38	.17	.57	-.00	.12	.12	.00	.08	-.03	-.02	.03	-.02

the conceptual dimensions of health education in the home (Table 3).

A second factor analyses were performed, specifying separate six, five, four, three and two factor explanatory models. The purpose of specifying the numbers of factors per model, was to further condense the instrument variables into the most parsimonious and interpretable solution. Neither six, five nor four-factor solutions showed congruence with the proposed dimensions of the dependent care agency construct.

The Three-Factor Model

Table 4 illustrates the factor matrix derived by specifying a three-factor model. Items 27, 28, 30, 32 and 33 (refer to Appendix E), presented with factor loadings less than .40 and were omitted from further analysis. These variables had been intended to measure ego strength (items 28, 32), health values (items 27, 30), and health beliefs, (item 33). In addition to these, items 31, 36, 37, 40 and 41, which were designed to measure ego strength (item 31) and beliefs about physical dimensions of health (items 36, 37, 40, 41) had significant factor loadings on two of the three factors and were also omitted from the analysis. Due to this selection criterion, the total number of variables was reduced from 48 to 38 in the three-factor model.

The first factor resulting from this factoring strategy included 21 variables (items 7-26,29) which reflected the

Table 4

Orthogonal Rotation of HEQ Responses: The Three-Factor Model

	Factor 1	Factor 2	Factor 3
V01	.46	-.26	.19
V02	.58	.02	.09
V03	.61	.00	.28
V04	.60	.12	.12
V05	.59	-.02	.23
V06	.53	-.14	.09
V07	.55	.08	.25
V08	.46	.22	-.00
V09	.66	.27	.01
V10	.54	.30	-.17
V11	.48	.10	.30
V12	.55	.14	-.14
V13	.73	.00	-.06
V14	.69	.20	-.19
V15	.59	.03	.05
V16	.46	.21	.19
V17	.57	.17	-.00
V18	.49	.26	-.06
V19	-.41	.21	.19
V20	.40	.12	.15
V21	.00	.04	.19
V22	.14	.04	.38
V23	.42	.01	.36
V24	.29	.27	.23
V25	.41	-.07	.61
V26	.29	.07	.15
V27	-.05	.12	.18
V28	-.03	.20	.60
V29	.00	.54	.22
V30	.10	.48	.58
V31	.02	.44	.56
V32	.09	.37	.55
V33	.12	.59	.33
V34	-.05	.45	.60
V35	.10	.50	.52
V36	.14	.70	.17
V37	.18	.72	.02
V38	.25	.67	.12
V39	.06	.49	.26
V40	.21	.60	.26
V41	.03	.67	.34
V42	.03	.21	.56
V43	.12	.74	.29
V44	.09	.61	.02
V45	.14	.50	.14
V46	.07	.25	.67
V47	.16	.59	.14
V48	.28	.16	.59

perceived knowledge and ego strength factors proposed in Hypothesis II. This factor was labeled perceived knowledge/responsibility. The items comprising the perceived importance factor proposed in Hypothesis II was split between the remaining two factors in the three-factor model.

Factor two was comprised of twelve variables (items 35,39,42-47,49-51,53) which described parents' beliefs regarding physical dimensions of health education for children. Factor three contained five variables (items 34,38,48,52,54) which described parents' beliefs about psychological dimensions of health and the parental educator role. Although interpretable, the three-factor solution was not as conceptually clear as the two-factor model.

The Two-Factor Model

Table 5 illustrates the factor matrix obtained when a two-factor solution for the 48 variables was specified. As may be seen in the three-factor model (Table 4), items 27, 28, 30, 32 and 33 failed to load onto either of the two factors, and were omitted from the analysis. The two, resulting, orthogonal factors were approximately equal with regard to the number of variables and were interpretable based on the proposed dimensions of the dependent care agency construct.

Factor one, which accounted for 50% of the explained variance in HEQ responses, was composed of 21 variables

Table 5

Orthogonal Rotation of HEQ Responses: The Two-Factor Model

	Perceived Importance	Perceived Knowledge/Responsibility
V01	-.09	.44
V02	.05	.58
V03	.15	.60
V04	.15	.61
V05	.10	.59
V06	-.06	.52
V07	.20	.56
V08	.15	.47
V09	.19	.67
V10	.10	.55
V11	.25	.49
V12	-.00	.55
V13	-.06	.73
V14	.01	.69
V15	.04	.60
V16	.27	.47
V17	.11	.58
V18	.14	.50
V19	-.02	-.41
V20	.17	.40
V21	.15	.00
V22	.27	.14
V23	.22	.42
V24	.34	.31
V25	.30	.40
V26	.14	.30
V27	.21	-.04
V28	.53	-.01
V29	.56	.03
V30	.74	.13
V31	.69	.05
V32	.63	.11
V33	.67	.15
V34	.72	-.03
V35	.72	.12
V36	.65	.17
V37	.56	.21
V38	.58	.28
V39	.54	.09
V40	.63	.24
V41	.74	.06
V42	.51	.04
V43	.75	.15
V44	.47	.12
V45	.47	.17
V46	.60	.08
V47	.54	.19
V48	.48	.29

designed to test parents' beliefs about the importance of education for their children on selected health topics and their role as health educators in the home. Factor two, which accounted for 22% of the explained variance, was composed of 22 variables which measured parents' perceptions of knowledge regarding selected health topics (items 7-20, 22-26), ego strength (items 29, 31) and parental health values (item 21).

Factor one was labeled perceived importance, while factor two, which subsumed items which had been proposed to account for three separate factors, was labeled perceived knowledge/responsibility. The correlation between these factors was -0.61572 , which demonstrates their conceptual distinctness and independence. Based on this two-factor model, the final form of the HEQ was a 43-item instrument, excluding the six demographic variables (Appendix F).

In summary, the initial testing of the HEQ with a relatively homogenous group of parents proved it to be a highly reliable data collection instrument. Validation of the dependent care agency construct related to health education in the home as a four-factor model was not demonstrated in the responses of the 97 parent-participants. However, interpretable two and three-factor solutions were found, validating two major proposed dimensions of the dependent care agency model.

Chapter 4 discusses the results of this analysis as it relates to testing the theoretical construct. It

includes conclusions drawn from analysis of the HEQ and implications for future research.

Chapter 4

Discussion

In the interest of generating new nursing knowledge to improve life and health, the significance of instrument development research is appreciable. The advancement of preferred health care modalities and the evolution of nursing as a science depend on the continued contributions of nurse researchers. Generation of reliable and valid data collection instruments is the first step toward that end.

The research reported here involved the development of an instrument relevant to a previously unexplored area of health, the role of parents as health educators in the home. This dimension of parenting is a conceptual piece of Orem's dependent care agency construct. 'Dependent care', as it implies, is concerned with one person caring for another; and 'agency' refers to the existence of factors which enable a person to function in this way.

Factors which support the occurrence of health education by parents in the home have not been identified. Prior work on the closely related self-care construct lent direction for the early stages of instrument construction in this study.

Reliability

The first of two hypotheses predicted instrument reliability demonstrated by an obtained alpha coefficient at or above .70. Values indicating internal consistency of the 48-item questionnaire based on responses of the 97 participants continued to demonstrate good instrument reliability ($\alpha=.92$). Additionally, the cognitive (knowledge) and affective (beliefs of importance) subsets showed comparably high individual coefficients, with an alpha coefficient for the cognitive item subset of .88 and for the affective item subset of .92. Following factor analyses and identification of the two-factor model, the original cognitive and affective item subsets, which underwent minor revisions based on factoring selection criteria, again demonstrated ample reliability (cognitive subset $\alpha=.88$; affective subset $\alpha=.92$). The results of internal consistency testing was quite satisfactory. The HEQ performed as a reliable measure of parents' self-reported knowledge and beliefs regarding health education for their children related to selected health topics.

Construct Validation

For the purpose of explaining dependent care agency, it was theorized that the construct described an intellectual function comprised of multiple factors. In the interest of obtaining a simple initial explanatory model, the two major dimensions, knowledge and beliefs, were extended to include

two additional factors which had been identified in testing the similar self-care agency construct. Ego strength and health values, identified by Denyes (1981) as factors in the self-care agency of adolescents, were adopted as affective factors which the researcher believed were sufficiently independent that they would discriminate from the "knowledge" and "beliefs" variables.

A fifth factor, "physical strength", was initially represented by five items in the 87-item instrument used in the first pilot test. Although Denyes (1981) found this factor to be significant in the self-care agency of adolescents, mothers who responded in the first pilot phase of this study showed no variability in responses on these items. Physical strength was not a factor in the production of health behaviors on behalf of a child. This finding was significant in several respects. It strengthened the conceptualization of agency as an intellectual entity. Additionally, it differentiated dependent care agency from self-care agency. Apparently, some unknown aspect of dependent care agency related to children transcends a parent's perceptions of physical strength or fatigue. Future research might explore "sense of responsibility", "duty" or perhaps "maturity" as dimensions of dependent care-taking of children. It may be further hypothesized that dependent care agency related to child-care may be differentiated from dependent care agency related to care of the elderly. Continued research is

certainly warranted.

Hypothesis II, which predicted a four-factor model explaining dependent care agency was not supported. The major dimensions of agency derived from the theoretical framework, knowledge and beliefs, emerged conclusively as distinct and independent factors. However, the ego strength and health values items which were retained based on acceptable factor loadings constituted only five items in the final form of the tool and these were subsumed under factor two, perceived knowledge, which was subsequently labeled perceived knowledge/responsibility. One apparent explanation for this, was related to the wording of these items, which specified ego strength and health values related to health education. Future instrument construction should continue to explore dimensions of character strength and values as probable dimensions of the dependent care agency construct. Repeated investigation of agency using various methodologies is advisable to avoid discarding potentially valid contributory elements of this complex theoretical construction prematurely.

Items measuring health beliefs related to selected health topics emerged as the stronger factor in the two-factor solution. Factor one, labeled perceived importance was conceptualized as a composite of the clearly specified Health Decision Model variables. It was theorized that if parents believed a child was susceptible to health threats as a function of ignorance, and if the

parent perceived that these threats to health were serious, then the parent's belief in the importance of health education as a preventive or avoidance measure would logically follow.

Data analysis supported the presumption that strong health beliefs are a fundamental predisposing factor in the pre-production phase of health action-taking. In addition to designing and implementing modified replication studies for the purpose of strengthening this portrait of the intellectual phase, future research should complete the picture of dependent care agency by exploring the actual production of health behaviors.

The three-factor model derived through factor analysis revealed an intriguing differentiation of the perceived importance variables. The perceived knowledge factor was stable between the two and three factor models, however, the perceived importance factor split into two independent factors.

The twelve items which comprised factor two dealt exclusively with parents' beliefs about the physical dimensions of their children's health. Based on responses of parent-participants, perceived importance related to regular physical and dental check-ups, and parent-child discussions about puberty/sex, pregnancy/birth, body systems/function, contagious disease, death, physical/sexual abuse, alcohol and drug abuse, smoking and divorce, were aggregated as a conceptual entity.

During the instrument construction phase, the intent had been to survey parents' perceptions related to physical, developmental and psychosocial dimensions of health. Factor two of the three-factor model presented with strictly 'physical' items (physical and dental check-ups, body function, contagious disease), as well as developmental and psychosocial topics with both physical and emotional components (sex-related issues, substance abuse, death). The item related to "divorce" was the only item which was not readily explainable as a member of a "physical factor". One possible solution is that the concept of divorce may represent physical separation or absence to parents. It is understandable that an initial response to this item might have been physically oriented with long-term psychosocial and family adjustment implications of divorce sublimated in deference to the stronger symbolic interpretation of physical aloneness.

The third factor of the three-factor model was comprised of five items which reflected psychosocial dimensions of health, safety and the parents' role as health educator in the home. Psychosocial items measured parents' perceptions of the importance of assessing children's peer relations and perceptions of self. In contrast, the one safety item was considered to be inherently "physical" and the item related to health education was more parent-centered than child-centered. A possible explanation emerges when comparing factors two and

three.

Factor two describes physical dimensions of health that may be considered "extra-familial". Certainly, the developmental aspects of health are not under the control of parents. Also, the concept of professional care is addressed by items related to regular physical and dental check-ups, which also support the "extra-familial" theory. Additionally, the highly publicized social health threats related to drug and alcohol dependency, smoking and child abuse may be perceived by parents as having an orientation external to the family sphere of influence.

In contrast, emotional health and safety may be perceived by parents to be more directly under their control, and therefore may be considered intra-familial. This may also be true of parents' perceptions of the importance of their health educator role, which is self-determined. It is worthwhile to note that the five omitted variables which had significant loadings onto both factors two and three described physical dimensions of children's health which are traditionally managed in the home, ie. nutrition, grooming, assessment of physical health, and rest and exercise.

Analysis of the three-factor model indicated the possibly dual nature of family health as perceived by parents. Traditional areas of intervention may be distinguished from dimensions of health which are perceived as being more strongly influenced by social factors or the

health care bureaucracy. This suggests that parents may operate selectively as health educators based on their perceptions regarding the scope of their influence, and ability. Nothing in the literature addressed this possible subjective compartmentalization of health education topics by parents. However, demands for further research would be strongly supported by the possibility that parents might fail to take action on a category of health issues based on intra-familial versus extra-familial orientation.

Demographic Characteristics of the Participants

Although hypotheses were not constructed predicting relationships between parents' perceived knowledge and beliefs and the demographic item responses, the information obtained describing characteristics of the sample population was prescribed by the theoretical framework and provided insight for future demographic item construction and analysis. Previous research related to health behavior using the Health Belief/Health Decision Model has identified age, sex and educational and income levels as determinants pertinent to the production of health behaviors (Eraker, Kirscht & Becker, 1984; Becker, 1974; Kirscht, 1974; Rosenstock, 1974). Results related to educational and income levels in particular have important implications for future research. Members of lower socio-economic groups, who tend to have less education, may utilize health resources differently when compared with groups characterized by higher annual incomes and/or more

formal education. Health care professionals who encourage health behaviors related to illness prevention and health maintenance and promotion, are concerned about the episodic nature of health action-taking by members of such socio-demographic groups (Becker, 1974; Eraker, Kirscht & Becker, 1984; Kirscht, 1974; Rosenstock, 1974). It is possible that health education, a dimension of preventive health activity, may not be part of the action-taking repertoire of these persons, who tend to be present-oriented problem-solvers with short-term health care goals related to illness and sick role behaviors (Becker, 1974).

The sample population responding to the HEQ was a relatively homogeneous group. Responses were primarily from mothers of two children. Extreme ranges of education and family income were not represented in a manner consistent with existing national population norms and therefore data derived from this sampling may not be generalizable to the target population, ie., all parents of school-age children.

The intended purpose of collecting socio-demographic data is to describe a sample and correlate sample descriptive data with other measures. In the case of further testing the dependent care agency construct, information such as age, sex, number of children, and income and educational levels could be correlated with measurements related to capability for health

action-taking.

It is also noteworthy that 11% of study respondents were fathers, and that 4% of the questionnaires were completed jointly by both mothers and fathers. While not critical for this methodological study, these figures suggest an interest on the part of both parents in home health education which may support the continuation of family-focused health research. However, responses indicated that the health of children remains primarily a concern of mothers rather than fathers.

An additional demographic item "work experience in a health-related field" was included in the item set based on an unstated research question: do parents with careers related to health (e.g. nurses, dental hygienists, physicians) believe themselves to have a greater capacity to function as health educators? This question, based on social determinants of health behaviors, should be investigated in future research efforts. The currently incomplete model of the factors which influence health action-taking is complex and the imperative for further exploration of social characteristics of parents as dependent care agents is unquestionable.

For further discussion of demographic characteristics and health action-taking of families, the reader is referred to Nolte, Smith and O'Rourke (1983) and Rosenblum, Stone and Skipper (1981). Organized educational intervention for promoting preventive health behaviors on

behalf of school-age and adolescent children is discussed by Kirby (1986), Petosa (1986), Dailey (1985), Parcel and Coreil (1985), Winkelman and McKaig (1983), and Hart and Behr (1980).

Recommendations

Overall, the research reported here suggested that the HEQ has promise as a reliable and valid measure of dependent care agency. Cognitive and affective dimensions of the intellectual phase of health action-taking were confirmed, and many ideas for future research were generated.

Additional testing related to the origins of health behaviors should further explore the usefulness of knowledge and beliefs as a framework for instrument construction. In addition, investigation of the actual production of health behaviors provides almost endless possibilities. However, the significance of such research would be limited if health activities were not evaluated as the sequelae of a preceding intellectual or pre-production phase.

Recommendations for continued work on the agency construct have been made throughout this discussion. The following suggestions are for alterations in research methodology related to this particular theory-testing study and similar future research attempts.

A quantitative research approach using a closed-ended data collection format was employed in this study. As

discussed, a qualitative approach, consistent with the phenomenological nature of the subject matter may provide fresh insights by allowing parent-participants the opportunity to express their thoughts on various elements related to dependent care agency. Participant responses to an open-ended, unstructured interview may provide additional clues on the nature and scope of a parent's capacity for health care-taking. The generation of new items related to 'agency' and the use of open response formats could be valuable in the attempt to fully realize the breadth and depth of this abstract and elusive construct.

Another tactic for ensuring representative and meaningful responses would be the employment of stratification procedures for sample selection. Samples reflecting a broader spectrum of population attributes with respect to age, sex, education and income would increase the generalizability of results.

Polit and Hungler (1983) asserted that methodological studies "are indispensable in any scientific discipline" (p. 215). This is especially true of an emerging profession such as nursing, which deals with the complexities of human behavior. Therefore, the importance of developing reliable and valid data collection instruments can not be underestimated. Additionally, methodological studies related to the testing of existing nursing theory are of particular importance.

In the past thirty years, nurses have recognized the

need to develop and test a distinct body of nursing knowledge and practice-oriented theories of nursing in the interest of advancing nursing as a science. Dorothea Orem's Self-Care Deficit Theory of Nursing is prominent among the theories found in nursing literature. Previous research related to Orem's theory has frequently focused on self-care related to chronic illness. Denyes' (1981) comprehensive study of the self-care agency of well adolescents expanded previously narrow interpretations of the construct to include the health care activities of well individuals. Truly, a capability for health action-taking exists in any state of health.

Dependent care agency is an equally important dimension of care-taking and related research needs to validate dependent care-taking across the life span and along every point of the health continuum. This study was an attempt to describe an intellectual, pre-production phase of dependent care agency specific to the parent's role as health educator in the home. A reliable data collection instrument was developed to verify knowledge and beliefs as major dimensions of the agency construct. This new instrument, the Health Education Questionnaire, has promise for future research. The need exists for continued exploration of this conceptually sophisticated dimension of family health.

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Appendices

Appendix A

Appendix A
Informed-Consent Letter to Parents

Dear Parent,

As part of my graduate studies in nursing at Old Dominion University, I am attempting to develop a questionnaire that will measure a parent's perceptions of his or her ability to act as a health educator in the home. In order to increase knowledge on this subject, I am asking you to participate in my research study.

The following is a questionnaire that deals with a parent's awareness of and beliefs about his or her child's health education needs, and the role parents play in the health education of their children. There are no "right" or "wrong" answers. The information gained from your answers could help educators and health-care professionals to plan health-care education for children, families and communities. The questionnaire should take about ten minutes to fill out.

Your child has been instructed to return the sealed completed form to a locked box located in the central office. I will be the only person with access to the completed questionnaires. Your decision to participate in the study has no bearing on your child's academic standing. The information collected will be kept strictly confidential. Only the overall results will be reported. Individual responses will not be reported, and it will not

be possible to identify the individual participants in the reported results. After the data are analyzed, the overall results of the study will be available to participants. A space is provided below where you may indicate your interest in receiving this information (please include name and mailing address). Old Dominion University will assume no responsibility for any physical or emotional harm incurred as a result of participation in this study.

Your completion of the following questionnaire serves as your consent to participate. If you have any questions regarding this study you may contact me or the Committee for the Protection of Human Subjects (phone# 440-4297). Your time and cooperation in this effort are greatly appreciated.

Sincerely,

JoAnn M. Baldwin RN, BSN

Master's Degree Candidate

I am interested in receiving a copy of the study results _____

Appendix B

Appendix B

The 87-Item Health Education Questionnaire

Instructions: The first six questions ask you to fill in some background information about you and your family. Please write in or check the appropriate answer for each question.

Your age is:

less than 26 _____ 26-30 _____ 31-35 _____
 36-40 _____ over 40 _____

Number of children _____ Ages of children _____

Your educational level:

did not graduate high school _____
 high school graduate _____ college graduate _____
 some college _____ post graduate _____

Do you have work experience in a health-related field? _____ Explain, please, if yes. _____

What is the income level of your family?

less than 15,000 _____ 35,001-45,000 _____
 15,000-25,000 _____ 45,001-55,000 _____
 25,001-35,000 _____ more than 55,000 _____

Your relationship to child _____

Instructions: Please answer the following questions by circling the number (1 through 7) that best answers the question for you. If no answer is quite right for you, circle the one that comes closest. There are no right or wrong answers. There may be some questions that seem similar. It would be helpful if you could answer them anyway. Please feel free to write comments and explain your answers in the margins and on the backs of pages.

For the following questions:

1=never	4=sometimes
2=very infrequently	5=frequently
3=infrequently	6=very frequently
	7=always

1. How often do you think you are good at problem-solving in relation to your child's health?

1 2 3 4 5 6 7

2. How often do you think clearly and logically about your child's health?

1 2 3 4 5 6 7

3. How often do you think you lack information needed to make decisions about your child's health?

1 2 3 4 5 6 7

4. How often do you think you are in touch with what's going on with your child's health?

1 2 3 4 5 6 7

5. How often do you think about several options before making decisions about your child's health?

1 2 3 4 5 6 7

6. How often do you think about what could happen because of decisions you make about your child's health?

1 2 3 4 5 6 7

7. When you need information about your child's health, how often are you able to get it?

1 2 3 4 5 6 7

8. How often do you think you are capable of making good decisions about your child's health?

1 2 3 4 5 6 7

9. How often do you think about what could happen because of things you do or don't do about your child's health?

1 2 3 4 5 6 7

10. How often do you think about your child's health?

1 2 3 4 5 6 7

11. How often does a lack of information interfere with you taking care of your child's health?

1 2 3 4 5 6 7

12. How often do you have the physical strength to take care of your child's health?

1 2 3 4 5 6 7

13. How often do you feel good about yourself?

1 2 3 4 5 6 7

14. How often do you have enough energy to do what you want to do?

1 2 3 4 5 6 7

15. How often do you have good feelings about yourself?

1 2 3 4 5 6 7

16. How often do you feel confused or unsure about what you are feeling?

1 2 3 4 5 6 7

17. How often does a lack of physical strength interfere with you taking care of your child's health?

1 2 3 4 5 6 7

18. How often do you trust your own judgments?

1 2 3 4 5 6 7

19. How often do you trust the judgments of other people (parents, friends, etc.)?

1 2 3 4 5 6 7

20. How often do you feel proud about doing things well?

1 2 3 4 5 6 7

21. How often do you feel good about your child's physical health?

1 2 3 4 5 6 7

22. How often do you think you have control over your child's health?

1 2 3 4 5 6 7

23. How often are you influenced by people you know or by what you see or hear to take care of your child's health?

1 2 3 4 5 6 7

24. When you need health information, how often are you willing to ask for it?

1 2 3 4 5 6 7

25. How often do you want to take responsibility for your child's health?

1 2 3 4 5 6 7

26. How often do you feel good about doing things well?

1 2 3 4 5 6 7

27. How often do you feel too fatigued to take care of your child's health?

1 2 3 4 5 6 7

28. How often do you feel good about your child's emotional health?

1 2 3 4 5 6 7

29. How often do you want someone else to take care of your child's health?

1 2 3 4 5 6 7

30. How often do you seek information that will help you take care of your child?

1 2 3 4 5 6 7

31. How often do you seek help when you are unable to take care of your child?

1 2 3 4 5 6 7

32. How often do you make good decisions about your child's health?

1 2 3 4 5 6 7

33. How often do you think of yourself as being responsible for your child's health?

1 2 3 4 5 6 7

For the following questions:

1=almost nothing

4=a moderate amount

2=a little

5=above average amount

3=below average amount

6=quite a bit

7=almost everything

34. How much do you know about your child's body and how it works?

1 2 3 4 5 6 7

35. How much do you know about your own personal strengths?

1 2 3 4 5 6 7

36. How much do you know about personal hygiene?

1 2 3 4 5 6 7

37. How much do you know about safety in relation to you child (fire, traffic, water, etc.)?

1 2 3 4 5 6 7

38. How much do you know about dental hygiene?

1 2 3 4 5 6 7

39. How much do you know about nutrition in relation to your child?

1 2 3 4 5 6 7

40. How much do you know about physical exercise in relation to your child?

1 2 3 4 5 6 7

41. How much do you know about rest and sleep in relation to your child?

1 2 3 4 5 6 7

42. How much do you know about contagious disease and immunization?

1 2 3 4 5 6 7

43. How much do you know about a child's perception of death?

1 2 3 4 5 6 7

44. How much do you know about children's peer relations?

1 2 3 4 5 6 7

45. How much do you know about sex education for children?

1 2 3 4 5 6 7

46. How much do you know about birth control?

1 2 3 4 5 6 7

47. How much do you know about what your child thinks about himself/herself?

1 2 3 4 5 6 7

48. How much do you know about venereal disease?

1 2 3 4 5 6 7

49. How much do you know about alcohol abuse?

1 2 3 4 5 6 7

50. How much do you know about what your child thinks about his/her accomplishments?

1 2 3 4 5 6 7

51. How much do you know about helping your child deal with a family issue such as childbirth?

1 2 3 4 5 6 7

52. How much do you know about drug abuse?

1 2 3 4 5 6 7

53. How much do you know about helping your child deal with a family issue such as divorce?

1 2 3 4 5 6 7

54. How much do you know about the incidence of teenage pregnancy?

1 2 3 4 5 6 7

55. How much do you know about smoking in relation to your child's health?

1 2 3 4 5 6 7

For the following questions:

1=not at all aware

4=moderately aware

2=slightly aware

5=quite aware

3=somewhat aware

6=very aware

7=extremely aware

56. How aware are you of your own feelings?

1 2 3 4 5 6 7

57. How aware are you of things you can do to maintain or improve your child's health?

1 2 3 4 5 6 7

58. How aware are you of your child's health?

1 2 3 4 5 6 7

59. How aware are you of your child's sexuality?

1 2 3 4 5 6 7

60. How aware are you of how much you value your child's health?

1 2 3 4 5 6 7

61. How aware are you of your child's feelings?

1 2 3 4 5 6 7

For the following questions:

1=not important

4=moderately important

2=a little important

5=important

3=somewhat important

6=quite important

7=extremely important

How important do you think these activities are:

62. immunization against contagious disease?

1 2 3 4 5 6 7

63. talking to your child about his/her friends?

1 2 3 4 5 6 7

64. regular dental checkups?

1 2 3 4 5 6 7

65. talking to your child about what he/she eats and the nutritional value of food?

1 2 3 4 5 6 7

66. talking to your child about how he/she feels physically?

1 2 3 4 5 6 7

67. talking to your child about how he/she feels about himself?

1 2 3 4 5 6 7

68. regular physical checkups?

1 2 3 4 5 6 7

69. talking to your child about the health information he/she gets in school?

1 2 3 4 5 6 7

70. talking to your child about cleanliness and grooming?

1 2 3 4 5 6 7

71. talking to your child about physical exercise?

1 2 3 4 5 6 7

72. talking to your child about puberty?

1 2 3 4 5 6 7

73. talking to your child about birth?

1 2 3 4 5 6 7

74. talking to your child about the way his/her body works?

1 2 3 4 5 6 7

75. talking to your child about contagious diseases and "germs"?

1 2 3 4 5 6 7

76. talking to your child about immunization?
1 2 3 4 5 6 7
77. talking to your child about death?
1 2 3 4 5 6 7
78. talking to your child about child abuse?
1 2 3 4 5 6 7
79. talking to your child about the need for rest and
sleep?
1 2 3 4 5 6 7
80. talking to your child about his/her accomplishments?
1 2 3 4 5 6 7
81. talking to your child about sex?
1 2 3 4 5 6 7
82. talking to your child about venereal disease?
1 2 3 4 5 6 7
83. talking to your child about birth control?
1 2 3 4 5 6 7
84. talking to your child about alcohol abuse?
1 2 3 4 5 6 7
85. talking to your child about divorce?
1 2 3 4 5 6 7
86. talking to your child about drug abuse?
1 2 3 4 5 6 7
87. talking to your child about smoking?
1 2 3 4 5 6 7

Appendix C

Appendix C

The 57-Item Health Education Questionnaire

Instructions: The first six questions ask you to fill in some background information about you and your family. Please write in or check the appropriate answer for each question.

Your age is:

less than 26 _____ 26-30 _____ 31-35 _____
 36-40 _____ over 40 _____

Number of children _____ Ages of children _____

Your educational level:

did not graduate high school _____
 high school graduate _____ college graduate _____
 some college _____ post graduate _____

Do you have work experience in a health-related field? _____

Explain, please if yes. _____

What is the income level of your family?

less than 15,000 _____ 35,001-45,000 _____
 15,000-25,000 _____ 45,001-55,000 _____
 25,001-35,000 _____ more than 55,000 _____

Your relationship to child _____

Instructions: The following questionnaire describes health issues that may commonly be dealt with by parents and their school-aged children. Parents are seen as managers of their children's health and as health educators in the home. Please answer the following questions by circling the number that best answers the question for you. If no answer is quite right for you, circle the one that comes closest. There are no right or wrong answers. There may be some questions that seem similar. It would be helpful if you could answer them anyway. Please feel free to write comments and explain your answers in the margins and on the backs of pages.

For the following questions:

1=never	4=frequently
2=infrequently	5=always
3=sometimes	

1. How often do you think you are good at problem-solving in relation to your child's health?

1 2 3 4 5

2. How often do you think you lack information needed to make decisions about your child's health?

1 2 3 4 5

3. How often do you think clearly and logically about your child's health?

1 2 3 4 5

Instructions: The following questionnaire describes health issues that may commonly be dealt with by parents and their school-aged children. Parents are seen as managers of their children's health and as health educators in the home. Please answer the following questions by circling the number that best answers the question for you. If no answer is quite right for you, circle the one that comes closest. There are no right or wrong answers. There may be some questions that seem similar. It would be helpful if you could answer them anyway. Please feel free to write comments and explain your answers in the margins and on the backs of pages.

For the following questions:

1=never	4=frequently
2=infrequently	5=always
3=sometimes	

1. How often do you think you are good at problem-solving in relation to your child's health?

1 2 3 4 5

2. How often do you think you lack information needed to make decisions about your child's health?

1 2 3 4 5

3. How often do you think clearly and logically about your child's health?

1 2 3 4 5

4. How often do you think you lack information to educate your child in health-related matters?

1 2 3 4 5

5. How often do you think you are aware of your child's health education needs?

1 2 3 4 5

6. How often do you think about what could happen in your child's life because of a lack of accurate health information?

1 2 3 4 5

7. When you need information about your child's health, how often are you able to get it?

1 2 3 4 5

8. How often do you think you are capable of making good decisions about your child's health?

1 2 3 4 5

9. How often do you trust your own judgments?

1 2 3 4 5

10. How often do you trust the judgments of other people (parents, friends, teachers, etc.)?

1 2 3 4 5

11. How often do you feel good about your child's physical health?

1 2 3 4 5

12. How often do you want to take responsibility for your child's health education?

1 2 3 4 5

13. How often do you feel good about your child's emotional health?

1 2 3 4 5

14. How often do you want someone else to take responsibility for your child's health education?

1 2 3 4 5

15. How often do you seek information that will help you educate your child in health matters?

1 2 3 4 5

16. How often do you think of yourself as being responsible for your child's health?

1 2 3 4 5

17. How often do you think you are the best person to educate your child about health matters?

1 2 3 4 5

How much do you know about the following?

1=almost nothing

4=above average amount

2=a small amount

5=almost everything

3=a moderate amount

18. How much do you know about your child's body systems and how her/his body works?

1 2 3 4 5

19. How much do you know about personal hygiene?

1 2 3 4 5

20. How much do you know about safety in relation to your child (fire, traffic, water, poisons, etc.)?

1 2 3 4 5

21. How much do you know about dental hygiene?

1 2 3 4 5

22. How much do you know about the nutritional value of food?

1 2 3 4 5

23. How much do you know about exercise and rest in relation to maintaining good health?

1 2 3 4 5

24. How much do you know about contagious diseases and immunization?

1 2 3 4 5

25. How much do you know about how a child might be helped to understand death?

1 2 3 4 5

26. How much do you know about children's peer relations?

1 2 3 4 5

27. How much do you know about educating your child about sex?

1 2 3 4 5

28. How much do you know about what your child feels about themselves and her/his accomplishments?

1 2 3 4 5

29. How much do you know about the symptoms and effects of alcohol abuse?

1 2 3 4 5

30. How much do you know about smoking in relation to health?

1 2 3 4 5

31. How much do you know about drug abuse in relation to school-age children, including recognition of commonly abused drugs, paraphernalia, and symptoms of drug abuse?

1 2 3 4 5

How aware are you of the following?

1=not at all aware

4=more aware

2=slightly aware

5=extremely aware

3=moderately aware

32. How aware are you of things you can do to maintain or improve your child's health?

1 2 3 4 5

33. How aware are you of your child's sexuality?

1 2 3 4 5

34. How aware are you of the incidence and signs of child abuse?

1 2 3 4 5

35. How aware are you of ways you can help your child to understand issues that effect family integrity, such as divorce or the birth of a child?

1 2 3 4 5

How important do you think these activities are?

1=not important

4=more important

2=a little important

5=extremely important

3=moderately important

36. immunization against contagious disease?

1 2 3 4 5

37. talking with your child about her/his friends?

1 2 3 4 5

38. regular dental checkups?

1 2 3 4 5

39. talking with your child about what she/he eats and the nutritional value of food?

1 2 3 4 5

40. talking with your child about how she/he feels physically?

1 2 3 4 5

41. talking with your child about how she/he feels emotionally?

1 2 3 4 5

42. regular physical checkups?

1 2 3 4 5

43. talking with your child about cleanliness and grooming?

1 2 3 4 5

44. talking with your child about exercise and rest?

1 2 3 4 5

45. talking with your child about puberty and sex?

1 2 3 4 5

46. talking with your child about pregnancy and birth?

1 2 3 4 5

47. talking with your child about the way her/his body
works?

1 2 3 4 5

48. talking with your child about contagious disease and
"germs"?

1 2 3 4 5

49. talking with your child about death?

1 2 3 4 5

50. talking with your child about child/sexual abuse?

1 2 3 4 5

51. talking with your child about her/his accomplishments?

1 2 3 4 5

52. talking with your child about alcohol abuse?

1 2 3 4 5

53. talking with your child about divorce?

1 2 3 4 5

54. talking with your child about drug abuse?

1 2 3 4 5

55. talking with your child about her/his own personal safety?

1 2 3 4 5

56. talking with your child about smoking in relation to her/his health?

1 2 3 4 5

57. How important do you think your role is as a health educator for your child?

1 2 3 4 5

Appendix D

Appendix D
Information Letter for Teachers

Dear Teacher,

As part of my graduate studies in nursing at Old Dominion University, I am attempting to develop a questionnaire that will measure a parent's perceptions of his or her ability to act as a health educator in the home. In order to increase knowledge on this subject, I am asking you to participate in my research study.

Your class has been selected to participate in this project. Questionnaires will be provided for all students in the classroom. As teachers, you are being asked to distribute these questionnaires at the end of the day and tell students to bring them home for one of their parents to complete (please do not specify which parent). Students should be instructed to return the completed questionnaires to the classroom the next day. I will continue to look for completed questionnaires until the end of the week, but Mrs. Dabney advises that it would be in the best interest of the project to request them to be returned as soon as possible.

The Human Subjects Committee at Old Dominion University has stipulated that teachers may not touch the completed questionnaires. Mrs. Dabney has suggested that one child be assigned to collect the questionnaires in the morning and deposit them in a locked collection box which I will have in the central office for that purpose.

Your time and cooperation in this effort are greatly appreciated.

Sincerely,

JoAnn M. Baldwin RN, BSN

Graduate Student

Old Dominion University

Appendix E

Appendix E

The 48-Item Health Education Questionnaire

Instructions: The first six questions ask you to fill in some background information about you and your family. Please write in or check the appropriate answer for each question.

Your age is:

less than 26 _____ 26-30 _____ 31-35 _____
 36-40 _____ over 40 _____

Number of children _____ Ages of children _____

Your educational level:

did not graduate high school _____
 high school graduate _____ college graduate _____
 some college _____ post graduate _____

Do you have work experience in a health-related field? _____ Explain, please, if yes. _____

What is the income level of your family?

less than 15,000 _____ 35,001-45,000 _____
 15,000-25,000 _____ 45,001-55,000 _____
 25,001-35,000 _____ more than 55,000 _____

Your relationship to child _____

Instructions: The following questionnaire describes health issues that may commonly be dealt with by parents and their school-aged children. Parents are seen as managers of their children's health and as health educators in the home. Please answer the following questions by circling the number that best answers the question for you. If no answer is quite right for you, circle the one that comes closest. There are no right or wrong answers. There may be some questions that seem similar. It would be helpful if you could answer them anyway. Please feel free to write comments and explain your answers in the margins and on the backs of pages.

How much do you know about the following?

1=almost nothing	4=above average amount
2=a small amount	5=almost everything
3=a moderate amount	

1. How much do you know about your child's body systems and how her/his body works?

1 2 3 4 5

2. How much do you know about personal hygiene?

1 2 3 4 5

3. How much do you know about safety in relation to your child (fire, traffic, water, poisons, etc.)?

1 2 3 4 5

4. How much do you know about dental hygiene?

1 2 3 4 5

5. How much do you know about the nutritional value of food?

1 2 3 4 5

6. How much do you know about exercise and rest in relation to maintaining good health?

1 2 3 4 5

7. How much do you know about contagious diseases and immunization?

1 2 3 4 5

8. How much do you know about how a child might be helped to understand death?

1 2 3 4 5

9. How much do you know about children's peer relations?

1 2 3 4 5

10. How much do you know about educating your child about sex?

1 2 3 4 5

11. How much do you know about what your child feels about himself/herself and their accomplishments?

1 2 3 4 5

12. How much do you know about the symptoms and effects of alcohol abuse?

1 2 3 4 5

13. How much do you know about smoking in relation to health?

1 2 3 4 5

14. How much do you know about drug abuse in relation to school-age children, including recognition of commonly abused drugs, paraphernalia, and symptoms of drug abuse?

1 2 3 4 5

How aware are you of the following?

1=not at all aware

4=more aware

2=slightly aware

5=extremely aware

3=moderately aware

15. How aware are you of things you can do to maintain or improve your child's health?

1 2 3 4 5

16. How aware are you of your child's sexuality?

1 2 3 4 5

17. How aware are you of the incidence and signs of child abuse?

1 2 3 4 5

18. How aware are you of ways you can help your child to understand issues that effect family integrity, such as divorce or the birth of a child?

1 2 3 4 5

How often do the following statements describe you?

1=never

4=frequently

2=infrequently

5=always

3=sometimes

19. How often do you think you lack information to educate your child in health-related matters?

1 2 3 4 5

20. How often do you think you are aware of your child's health education needs?

1 2 3 4 5

21. How often do you think about what could happen in your child's life because of a lack of accurate health information?

1 2 3 4 5

22. When you need information about your child's health, how often are you able to get it?

1 2 3 4 5

23. How often do you want to take responsibility for your child's health education?

1 2 3 4 5

24. How often do you seek information that will help you educate your child in health matters?

1 2 3 4 5

25. How often do you think of yourself as being responsible for your child's health?

1 2 3 4 5

26. How often do you think you are the best person to educate your child about health matters?

1 2 3 4 5

How important do you think these activities are?

1=not important

4=more important

2=a little important

5=extremely important

3=moderately important

27. immunization against contagious disease?

1 2 3 4 5

28. talking with your child about her/his friends?

1 2 3 4 5

29. regular dental checkups?

1 2 3 4 5

30. talking with your child about what he eats and the
nutritional value of food?

1 2 3 4 5

31. talking with your child about how he feels
physically?

1 2 3 4 5

32. talking with your child about how he feels
emotionally?

1 2 3 4 5

33. regular physical checkups?

1 2 3 4 5

34. talking with your child about cleanliness and
grooming?

1 2 3 4 5

35. talking with your child about exercise and rest?

1 2 3 4 5

36. talking with your child about puberty and sex?

1 2 3 4 5

37. talking with your child about pregnancy and birth?

1 2 3 4 5

38. talking with your child about the way his/her body works?

1 2 3 4 5

39. talking with your child about contagious disease and "germs"?

1 2 3 4 5

40. talking with your child about death?

1 2 3 4 5

41. talking with your child about child/sexual abuse?

1 2 3 4 5

42. talking with your child about his/her accomplishments?

1 2 3 4 5

43. talking with your child about alcohol abuse?

1 2 3 4 5

44. talking with your child about divorce?

1 2 3 4 5

45. talking with your child about drug abuse?

1 2 3 4 5

46. talking with your child about his/her own personal safety?

1 2 3 4 5

47. talking with your child about smoking in relation
to his/her health?

1 2 3 4 5

48. How important is your role as a health educator
for your child?

1 2 3 4 5

Appendix F

Appendix F

Final Form: The Health Education Questionnaire

Instructions: The following questionnaire describes health issues that may commonly be dealt with by parents and their school-aged children. Parents are seen as managers of their children's health and as health educators in the home.

Please answer the following questions by circling the number that best answers the question for you. If no answer is quite right for you, circle the one that comes closest.

There are no right or wrong answers. There may be some questions that seem similar. It would be helpful if you could answer them anyway. Please feel free to write comments and explain your answers in the margins and on the backs of pages.

How much do you know about the following?

1=almost nothing	4=above average amount
2=a small amount	5=almost everything
3=a moderate amount	

1. How much do you know about your child's body systems and how her/his body works?

1 2 3 4 5

2. How much do you know about personal hygiene?

1 2 3 4 5

3. How much do you know about safety in relation to your child (fire, traffic, water, poisons, etc.)?

1 2 3 4 5

4. How much do you know about dental hygiene?

1 2 3 4 5

5. How much do you know about the nutritional value of food?

1 2 3 4 5

6. How much do you know about exercise and rest in relation to maintaining good health?

1 2 3 4 5

7. How much do you know about contagious diseases and immunization?

1 2 3 4 5

8. How much do you know about how a child might be helped to understand death?

1 2 3 4 5

9. How much do you know about children's peer relations?

1 2 3 4 5

10. How much do you know about educating your child about sex?

1 2 3 4 5

11. How much do you know about what your child feels about himself/herself and their accomplishments?

1 2 3 4 5

12. How much do you know about the symptoms and effects of alcohol abuse?

1 2 3 4 5

13. How much do you know about smoking in relation to health?

1 2 3 4 5

14. How much do you know about drug abuse in relation to school-age children, including recognition of commonly abused drugs, paraphernalia, and symptoms of drug abuse?

1 2 3 4 5

How aware are you of the following?

1=not at all aware

4=more aware

2=slightly aware

5=extremely aware

3=moderately aware

15. How aware are you of things you can do to maintain or improve your child's health?

1 2 3 4 5

16. How aware are you of your child's sexuality?

1 2 3 4 5

17. How aware are you of the incidence and signs of child abuse?

1 2 3 4 5

18. How aware are you of ways you can help your child to understand issues that effect family integrity, such as divorce or the birth of a child?

1 2 3 4 5

How often do the following statements describe you?

l=never

4=frequently

2=infrequently

5=always

3=sometimes

19. How often do you think you lack information to educate your child in health-related matters?

1 2 3 4 5

20. How often do you think you are aware of your child's health education needs?

1 2 3 4 5

21. How often do you want to take responsibility for your child's health education?

1 2 3 4 5

22. How often do you think of yourself as being responsible for your child's health?

1 2 3 4 5

How important do you think these activities are?

1=not important

4=more important

2=a little important

5=extremely important

3=moderately important

23. talking with your child about her/his friends?

1 2 3 4 5

24. regular dental checkups?

1 2 3 4 5

25. talking with your child about what he eats and the nutritional value of food?

1 2 3 4 5

26. talking with your child about how he feels physically?

1 2 3 4 5

27. talking with your child about how he feels emotionally?

1 2 3 4 5

28. regular physical checkups?

1 2 3 4 5

29. talking with your child about cleanliness and grooming?

1 2 3 4 5

30. talking with your child about exercise and rest?

1 2 3 4 5

31. talking with your child about puberty and sex?

1 2 3 4 5

32. talking with your child about pregnancy and birth?

1 2 3 4 5

33. talking with your child about the way his/her body works?

1 2 3 4 5

34. talking with your child about contagious disease and "germs"?

1 2 3 4 5

35. talking with your child about death?

1 2 3 4 5

36. talking with your child about child/sexual abuse?

1 2 3 4 5

37. talking with your child about his/her accomplishments?

1 2 3 4 5

38. talking with your child about alcohol abuse?

1 2 3 4 5

39. talking with your child about divorce?

1 2 3 4 5

40. talking with your child about drug abuse?

1 2 3 4 5

41. talking with your child about his/her own personal
safety?

1 2 3 4 5

42. talking with your child about smoking in relation to
his/her health?

1 2 3 4 5

43. How important is your role as a health educator for your
child?

1 2 3 4 5